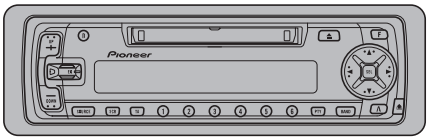
Service Manual



ORDER NO.
CRT2287

MULTI-CD/MD CONTROL HIGH POWER MINIDISC PLAYER WITH RDS TUNER

MEH-P5000R

EW

NOTE:

- **See the separate manual CX-893(CRT2291) for the MD mechanism circuit description and disassembly.**
- **This service manual does not describe the CD test mode.**
  For the operations in the CD test mode, refer to the CD player's Service Manual.
- **US and foreign patents licensed from Dolby Laboratories Licensing Corporation.**

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PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 501 Orchard Road, #10-00, Wheelock Place, Singapore 238880

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K-ZZD. OCT. 1998 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

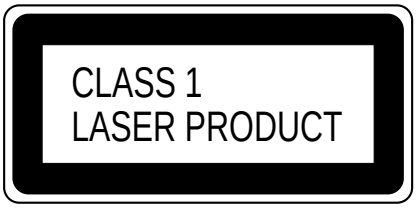
1. Safety Precautions for those who Service this Unit.

- **When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

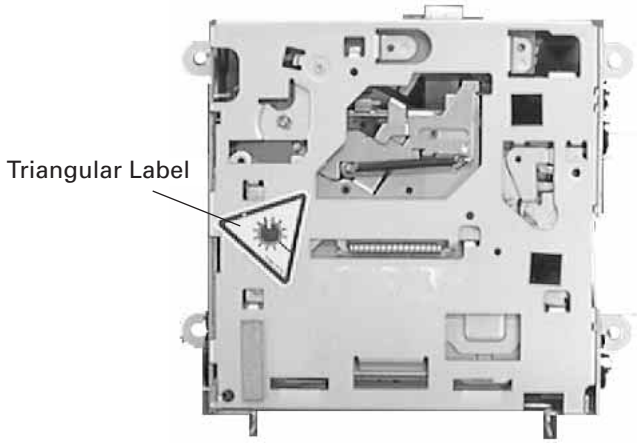
Caution:

1. During repair or tests, minimum distance of 13cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.

2. A "CLASS 1 LASER PRODUCT" label is affixed to the bottom of the player.



3. The triangular label is attached to the mechanism module frame.

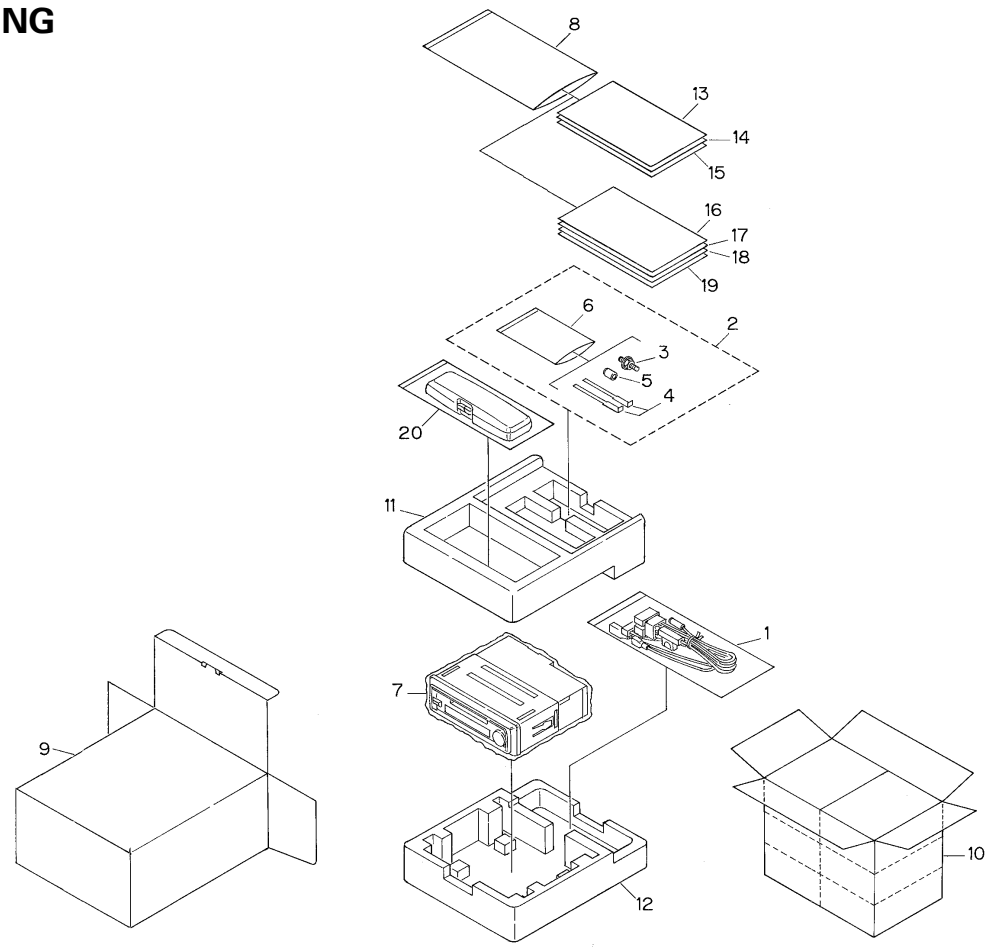


4. Specifications of Laser Diode

Specifications of laser radiation fields to which human access is possible during service.
Wavelength = 780 nanometers

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

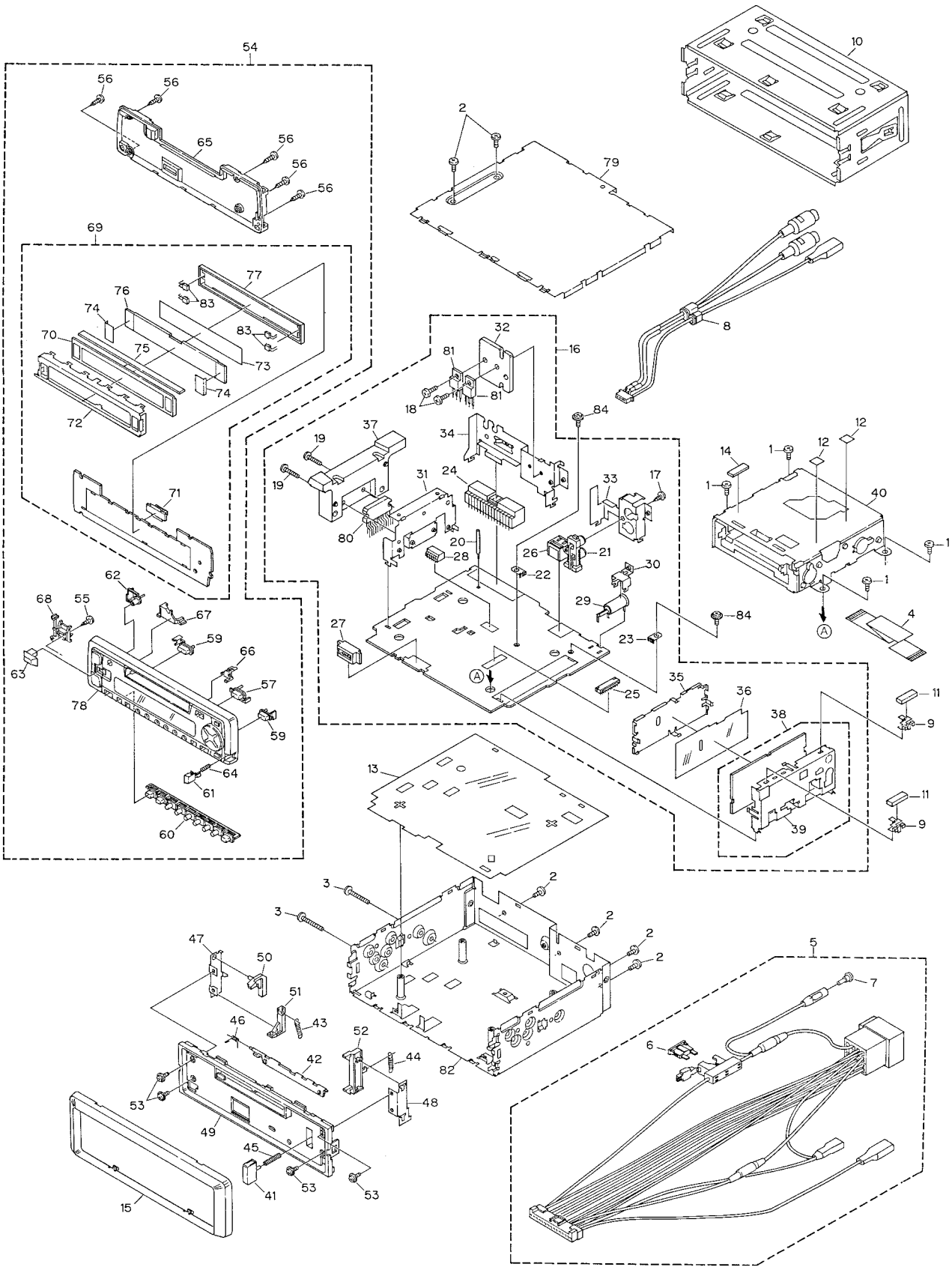
● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Cord Assy	CDE5722
	2	Accessory Assy	CEA1917
	3	Screw	CBA1284
	4	Handle	CNC5395
	5	Bush	CNV1009
*	6	Polyethylene Bag	E36-615
	7	Polyethylene Bag	CEG-162
	8	Polyethylene Bag	CEG1116
	9	Carton	CHG3540
	10	Contain Box	CHL3540
	11	Protector	CHP2098
	12	Protector	CHP2099
	13	Owner's Manual	CRD2736
	14	Owner's Manual	CRD2737
	15	Owner's Manual	CRD2738
	16	Installation Manual	CRD2739
*	17	Label	CRW1343
	18	Passport	CRY1013
*	19	Warranty Card	CRY1087
	20	Case Assy	CXB1063

● Owner's Manual, Installation Manual

Model	Part No.	Language
MEH-P5000R/EW	CRD2736	English, Spanish
	CRD2737	German, French
	CRD2738	Italian, Dutch
	CRD2739	English, Spanish, German, French, Italian, Dutch

2.2 EXTERIOR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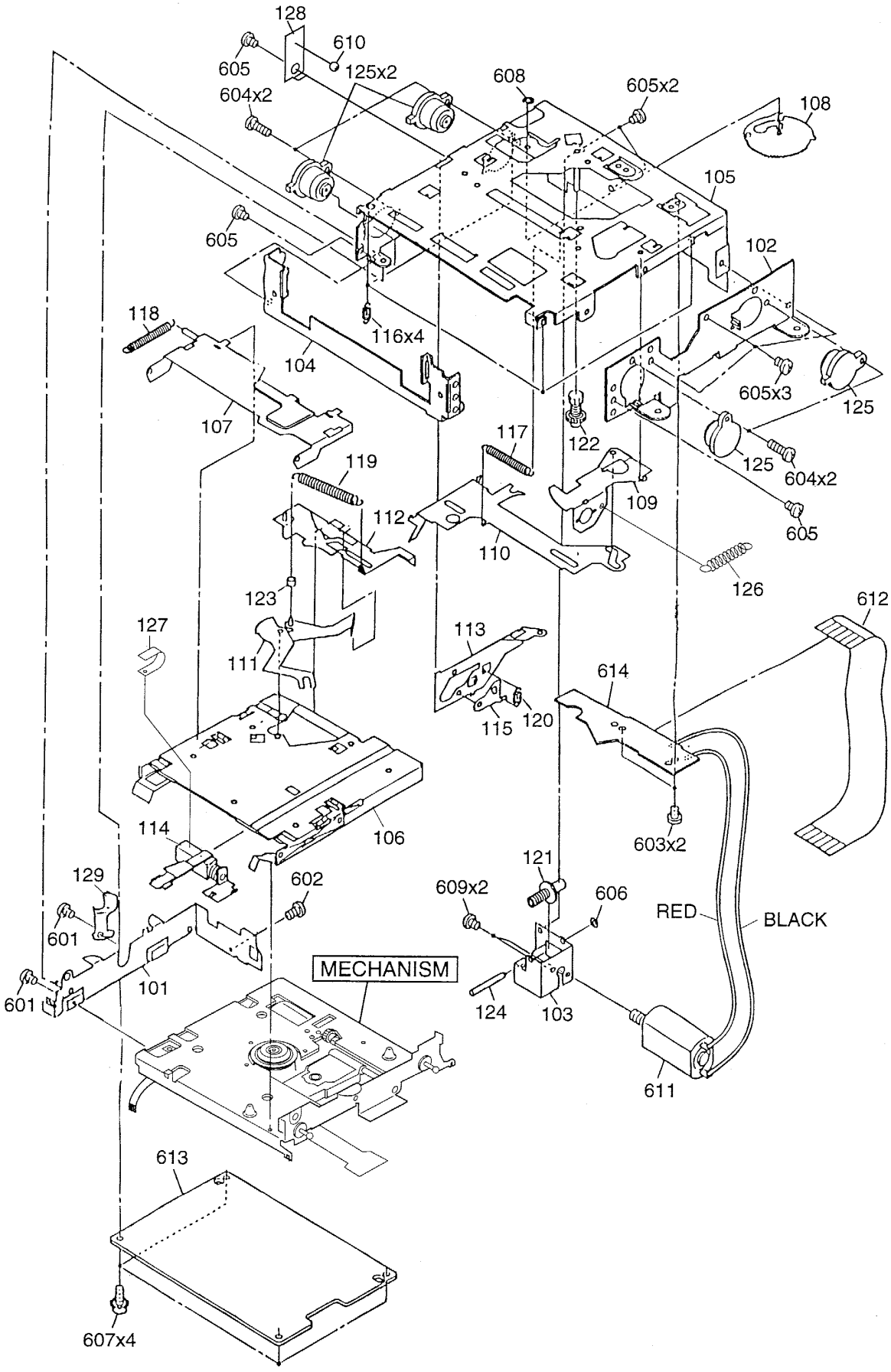
● EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BSZ26P050FMC
	2	Screw	BSZ30P060FMC
	3	Screw	BSZ30P200FMC
	4	Connector	CDE5718
	5	Cord Assy	CDE5722
	6	Fuse(10A)	CEK1136
	7	Terminal Cover	CKX-003
	8	Cord Assy	CDE5804
	9	Holder	CNC5704
	10	Holder	CNC6798
	11	Cushion	CNM4870
	12	Insulator	CNM5752
	13	Insulator	CNM5921
	14	Cushion	CNM5925
	15	Panel	CNS5097
	16	Tuner Amp Unit	CWM6036
	17	Screw	BPZ26P080FMC
	18	Screw	BSZ26P100FMC
	19	Screw	BSZ26P160FMC
	20	Clamper	CEF1005
	21	Pin Jack(CN452)	CKB1028
	22	Terminal(CN303)	CKF1059
	23	Terminal(CN351)	CKF1059
	24	Plug(CN501)	CKM1231
*	25	Connector(CN201)	CKS2221
	26	Connector(CN751)	CKS3408
	27	Connector(CN801)	CKS3581
	28	Connector(CN451)	CKS3599
	29	Antenna Jack(CN302)	CKX1056
	30	Holder	CNC4569
	31	Holder	CNC6361
	32	Heat Sink	CNC7369
	33	Holder	CNC7370
	34	Holder	CNC7968
	35	Holder	CNC8021
	36	Insulator	CNM4684
	37	Heat Sink	CNR1419
	38	FM/AM Tuner Unit	CWE1416
	39	Holder	CNC6555
	40	MD Mechanism Module	CXB2784
	41	Button	CAC5180
	42	Door	CAT1983
	43	Spring	CBH1834
	44	Spring	CBH1835
	45	Spring	CBH1996
	46	Spring	CBH2191
	47	Bracket	CNC6135
	48	Bracket	CNC6791
	49	Panel	CNS5096
	50	Arm	CNV4692
	51	Arm	CNV4693
	52	Arm	CNV4951
	53	Screw	IMS20P030FZK
	54	Detach Grille Assy	CXB2913
	55	Screw	BPZ20P080FMC
	56	Screw	BPZ20P080FZK
	57	Button(EJECT)	CAC5768
	58	Button(SOURCE)	CAC5769
	59	Button(BAND)	CAC5770
	60	Button(1-6)	CAC5771
	61	Button	CAC5772
	62	Button(D.RESET)	CAC5773
	63	Button(EQ)	CAC5774
	64	Spring	CBH2190
	65	Cover	CNS5094
	66	Lighting Conductor	CNV5505
	67	Lighting Conductor	CNV5506
	68	Holder	CNV5511
	69	Keyboard Unit	CWM6041
	70	LCD	CAW1490
	71	Connector(CN901)	CKS3580
	72	Holder	CNC7969
	73	Sheet	CNM5923
	74	Sheet	CNM5924
	75	Connector	CNV5504
	76	Lighting Conductor	CNV5507
	77	Housing	CNV5508
	78	Grille Unit	CXB2975
	79	Case Unit	CXB2918
	80	IC(IC501)	TDA7386
	81	Transistor(Q201,952)	2SD2396
	82	Chassis Unit	CXB2971
	83	LED(D903,904,907,908)	NSPWF50SB
	84	Screw	ISS26P055FUC

2.3 MD MECHANISM MODULE(1)

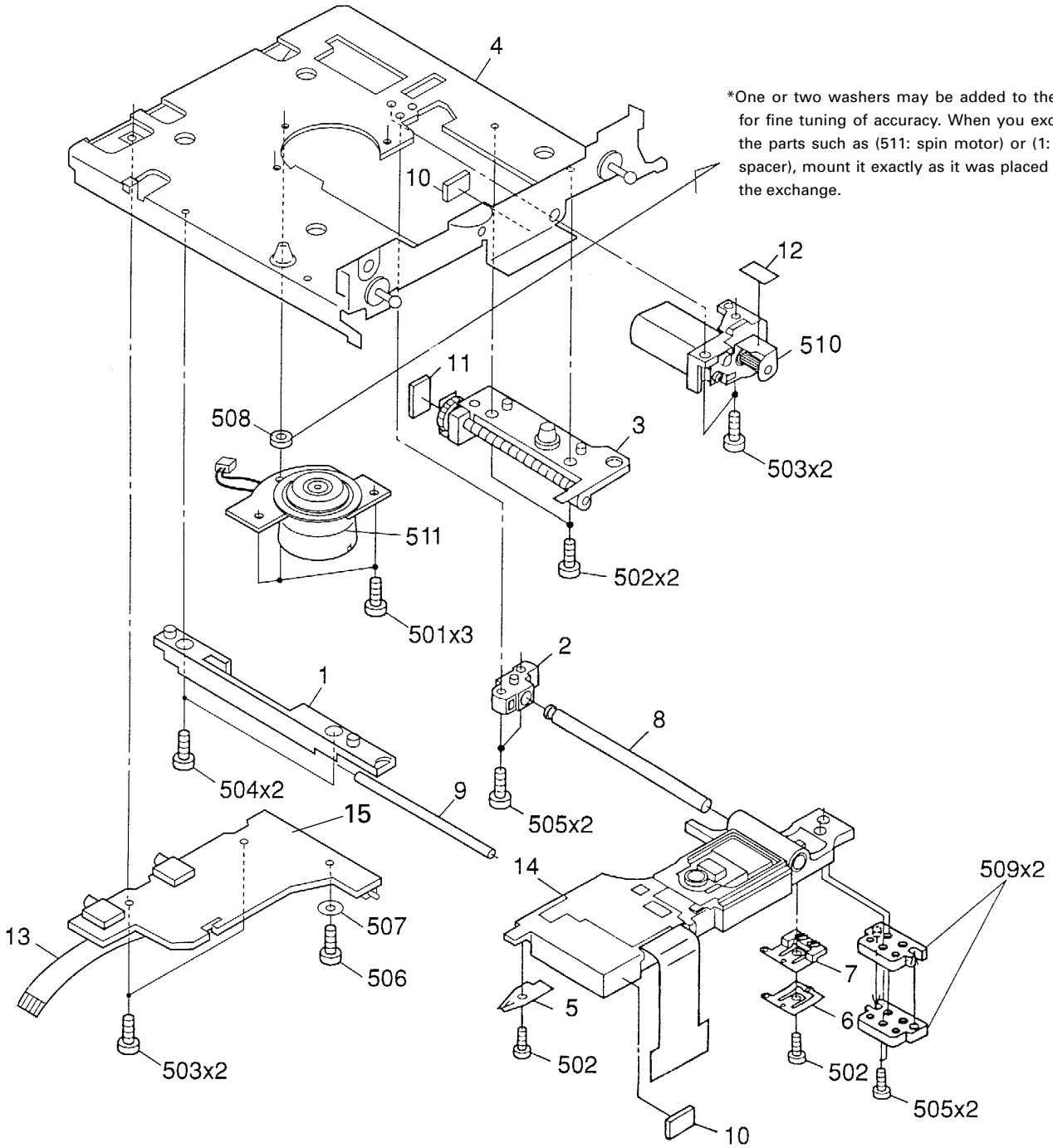


● MD MECHANISM MODULE(1) PARTS LIST

Mark No.	Description	Part No.
1-100	•••••	
101	Side Plate Assy, Right	1242000280
102	Side Bracket	1242000188
103	Loading Motor Bracket	1242000189
104	Front Guide	1242000190
105	Loading Chassis Assy	1242070066
106	Disc Holder Assy	1242140176
107	Disc Holder Arm	1242400018
108	Mode Gear	1242410003
109	FLT Lock Arm	1242480151
110	FLT Lock Plate	1242480112
111	Clamper Arm	1242480114
112	Loading Plate	1242480105
113	Mode Plate	1242480107
114	Catch Block	1242480108
115	Lift Arm	1242500001
116	Spring, Damper	1242580146
117	Spring, FLT Lock	1242580147
118	Spring, Disk Holder	1242580148
119	Spring, Clamper Arm	1242580149
120	Spring, Lift Arm	1242580150
121	Gear, Worm Wheel	1242810060
122	Gear, Pinion	1242810061
123	Roller, Clamper Arm	1242870012
124	Shaft, Worm Wheel	1242900093
125	Oil Damper	1243300001
126	Spring, FLT Lock Arm	1242580204
127	Spring, Slider	1242580201
128	Spring, Mode Plate	1242580202
129	Spring, Holder Hold	1242580203

Mark No.	Description	Part No.
130-600	•••••	
601	Screw, 1.7X1.6MM	1249700045
602	Screw, 1.7X2.5MM	1249700040
603	Screw, 2.0X3.0MM	1249700133
604	Screw, 2.0X3.5MM	1249700134
605	Screw, 2.0X2.2MM	1249700135
606	Washer, 1.2X3X0.2MM	1249900021
607	Screw, 2.0X4.0MM	1249700140
608	Washer	YE15FUC
609	Screw, 2.0X2.5MM	1249700158
610	Ball	CNR1189
611	Loading Motor Assy	1246300043
612	Flat Cable, 8 Pin	1245120221
613	Main PCB Assy	1246840250
614	Switch PCB Assy	1246840145

2.4 MD MECHANISM MODULE(2)



*One or two washers may be added to the parts for fine tuning of accuracy. When you exchange the parts such as (511: spin motor) or (1: motor spacer), mount it exactly as it was placed before the exchange.

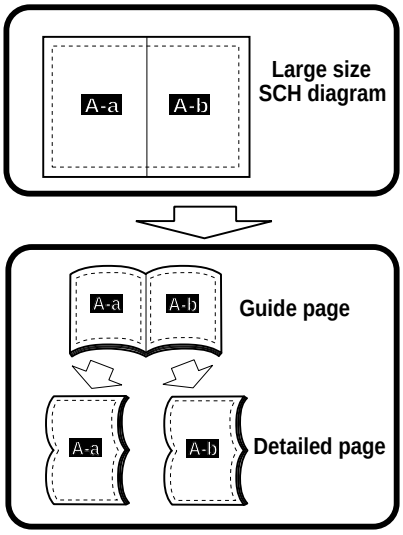
● MD MECHANISM MODULE(2) PARTS LIST

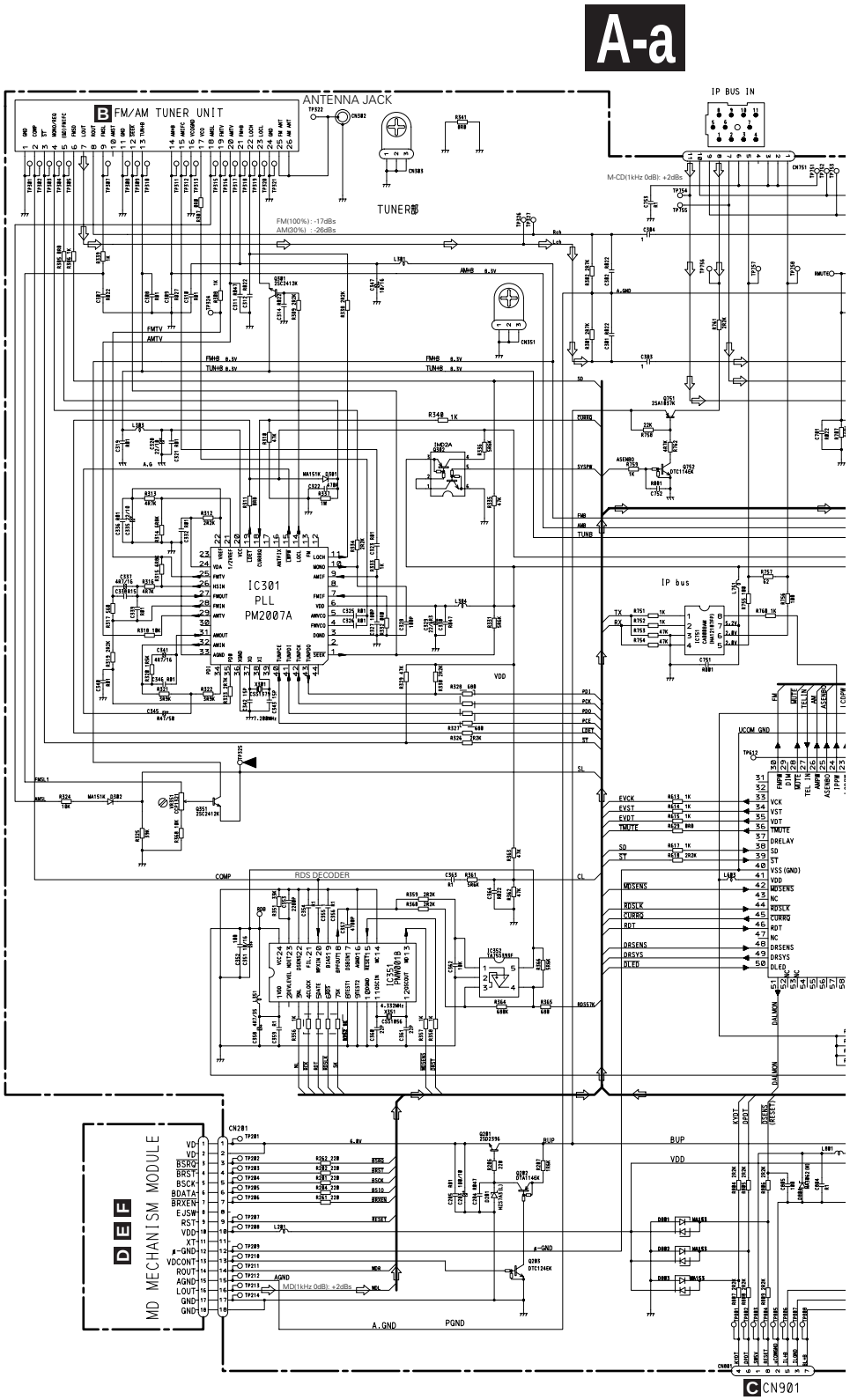
Mark No.	Description	Part No.
1	Holder Shaft Plate	1242000279
2	Shaft Guide Holder	1242000064
3	Drive Screw Assy Unit	1242000116
4	Main Chassis Assy	1242070065
5	Shaft Catch Spring	1242580007
6	Clip Spring	1242580067
7	Grip Rack	1242810021
8	Pickup Slide Shaft	1242900127
9	Slide Shaft(S)	1242900011
10	Mechanism Cushion	1243260122
11	Spring Cushion	1243260031
12	Spacer(C)	1244130006
13	Mechanism Flexible PCB	1245210120
14	Optical Pickup Assy	1246170023
15	Mechanism PCB Assy	1246840251
16-500	•••••	
501	Screw, 1.4X2MM	1249700138
502	Screw, 1.4X2.5MM	1249700007
503	Screw, 1.4X2.2MM	1249700011
504	Screw, 1.7X4.3MM	1249700055
505	Screw, 1.4X4.5MM	1249700033
506	Screw, 1.4X2.2MM	1309701315
507	Washer, 1.4X0.5MM	1309900937
508	Washer, 2.8X3.9X0.05MM	1249900020
509	Balance Weight	1242480150
510	Sled Motor Assy	1246300014
511	Spin Motor Assy	1246300060

3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



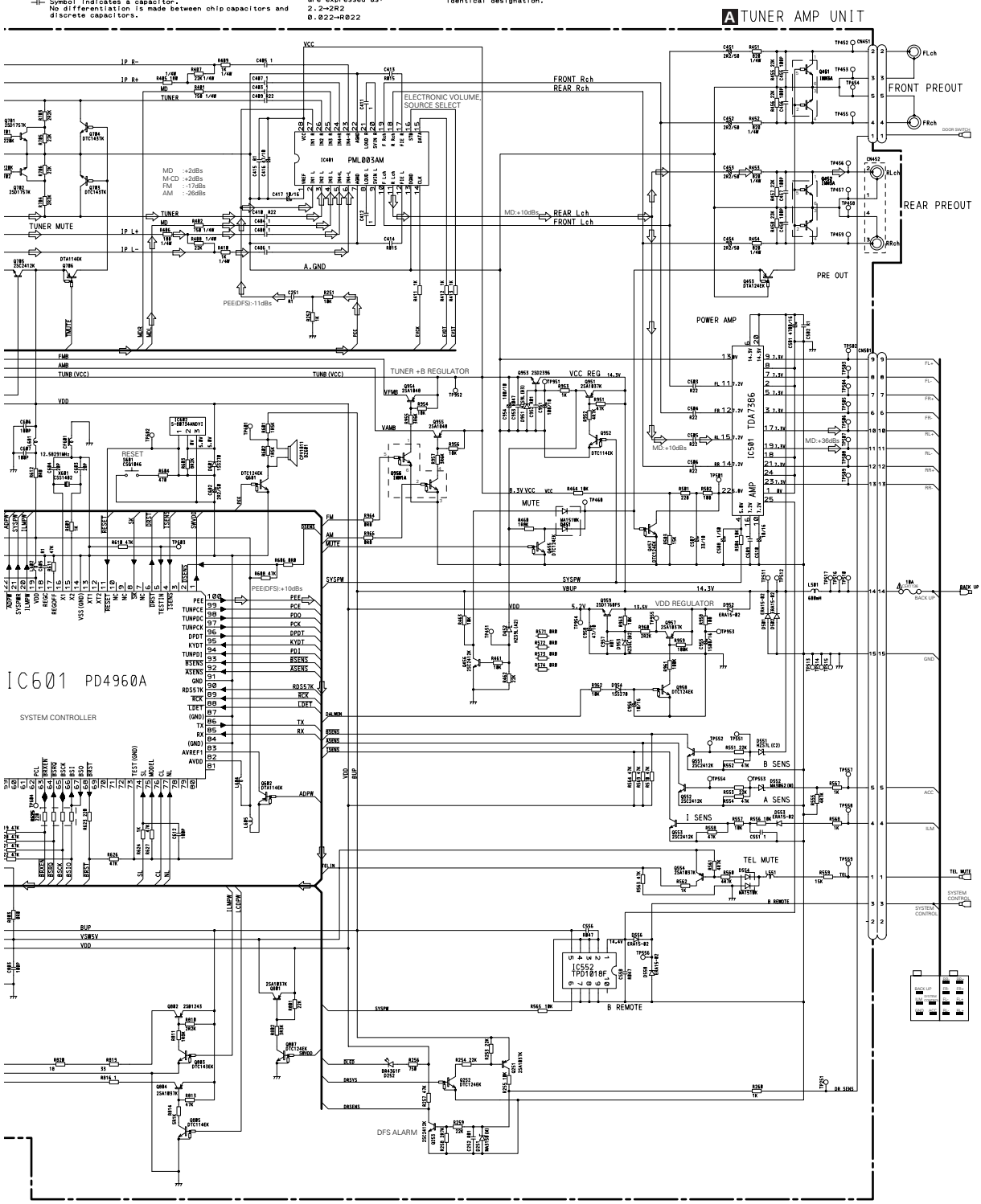


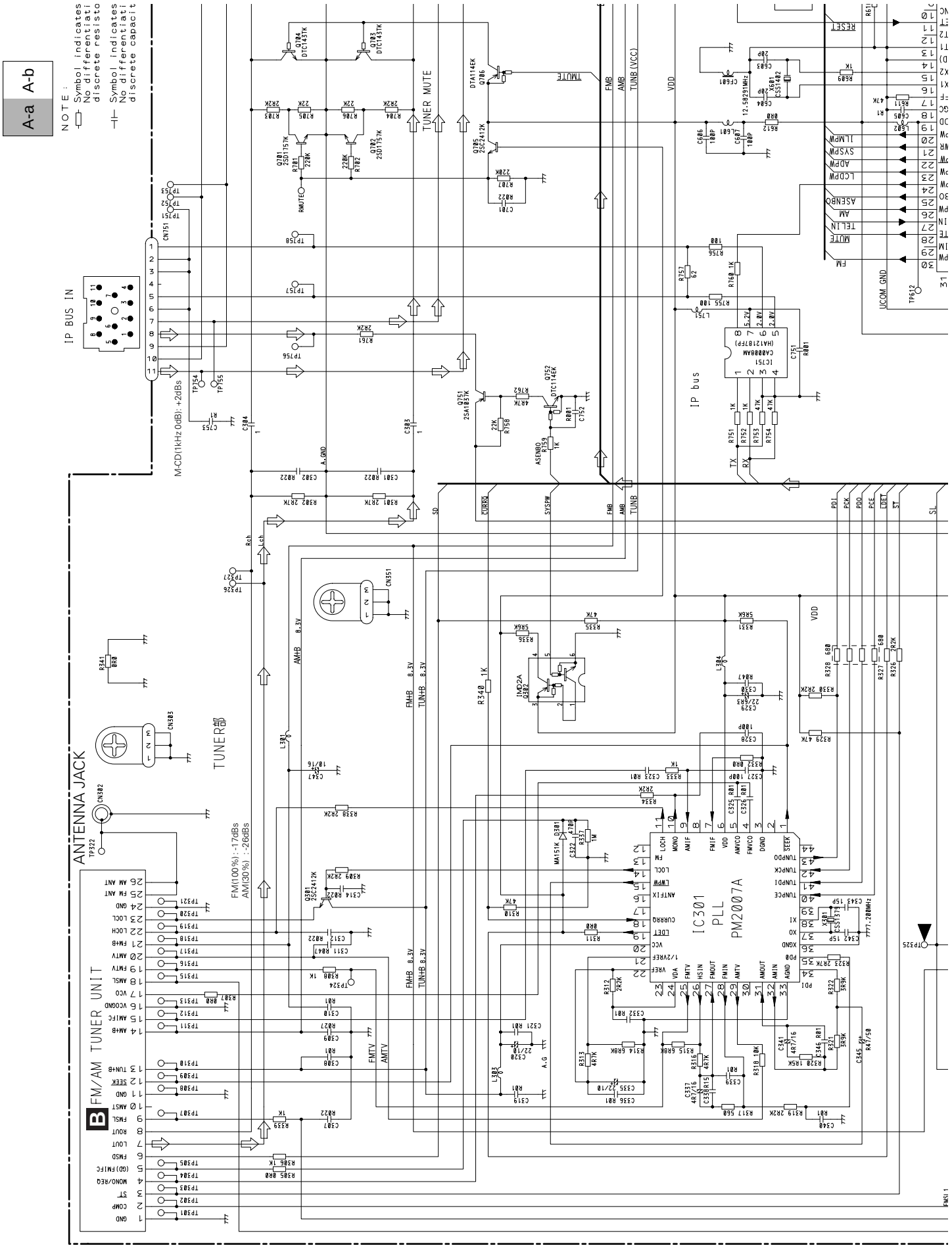
A-b

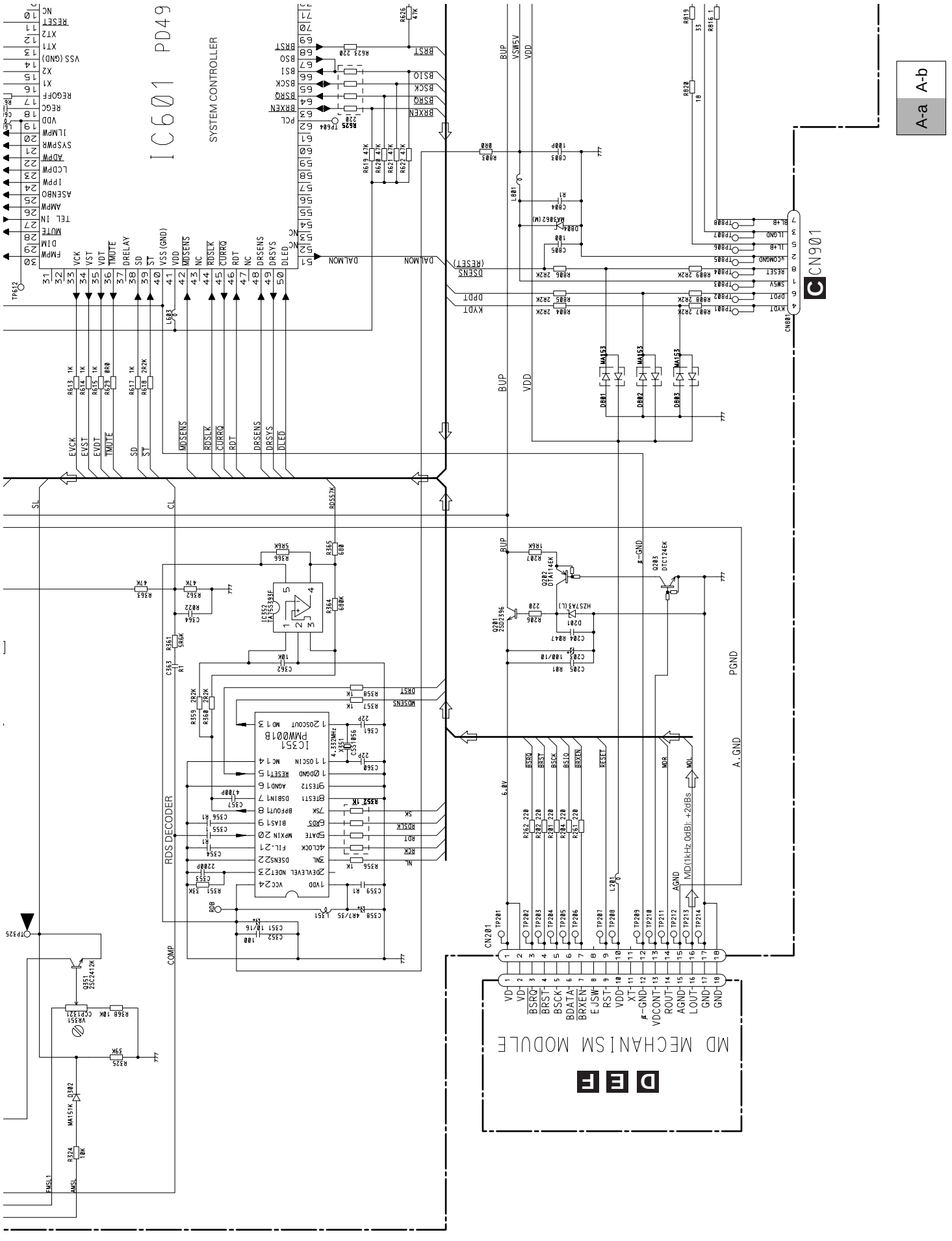
NOTE :
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

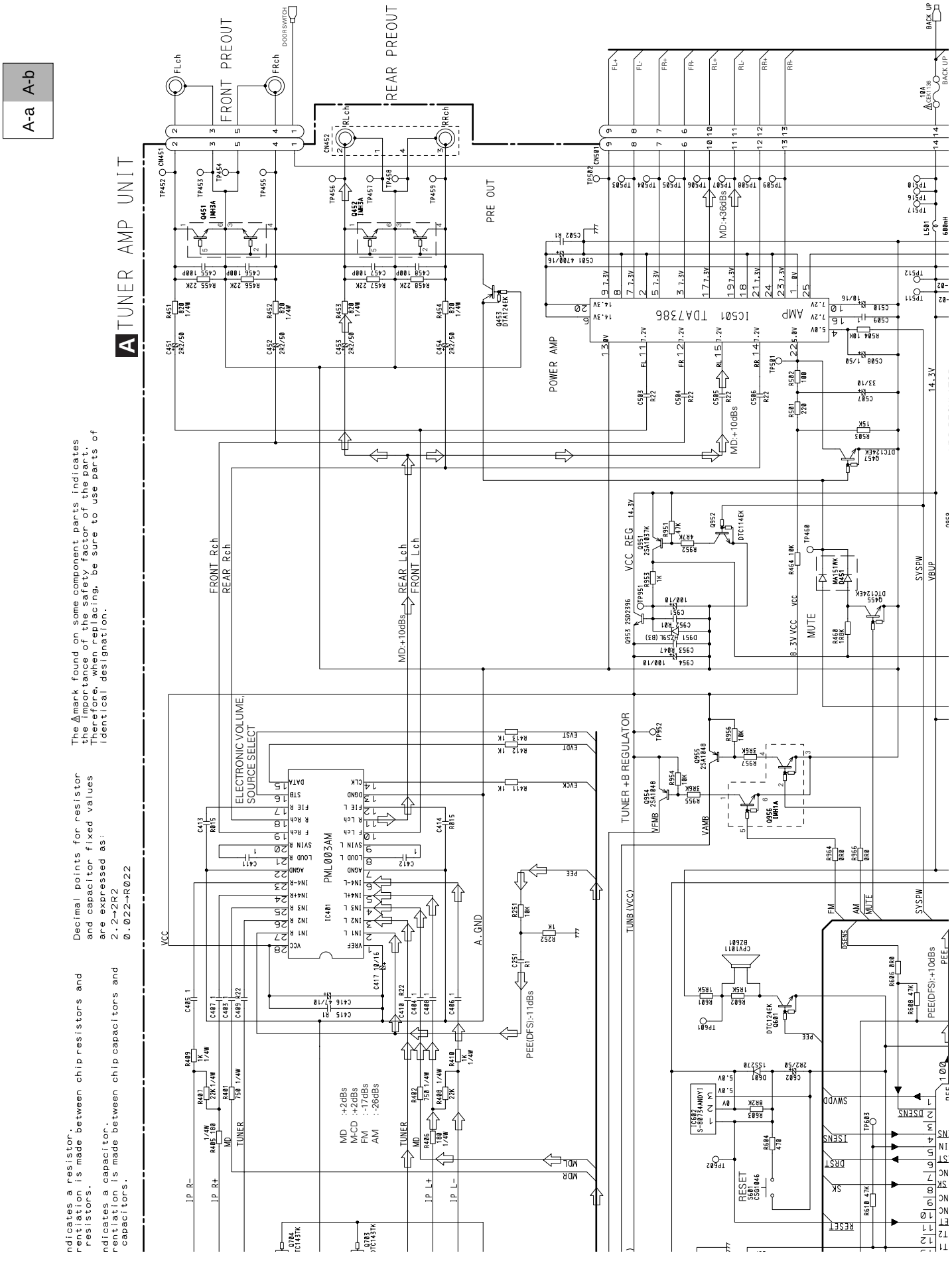
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

The Δmark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.




A-a A-b
NOTE :
Symbol indicates No differentiati discrete resisto
Symbol indicates No differentiati discrete capacit
IP BUS IN
M-CD(1kHz 0dB): +2dBs
TUNER MUTE
TMUTE
RMUTE
FMB
AMB
TUNB (VCC)
VDD
RESET
IP bus
UCOM GND
SD
CDRRQ
SYSPW
PDI
PCK
PDO
PCE
LDET
ST
SL
ANTENNA JACK
TUNER
FM(100%) : -17dBs
AM(30%) : -26dBs
B FM/AM TUNER UNIT
IC301
PLL
PM2007A
12.50231MHz
7.20MHz


IC601 PD49
SYSTEM CONTROLLER
CN901
CN201
RDS DECODER
IC351
PMW001B
MD MECHANISM MODULE
A. GND
PGND
A-a
A-b



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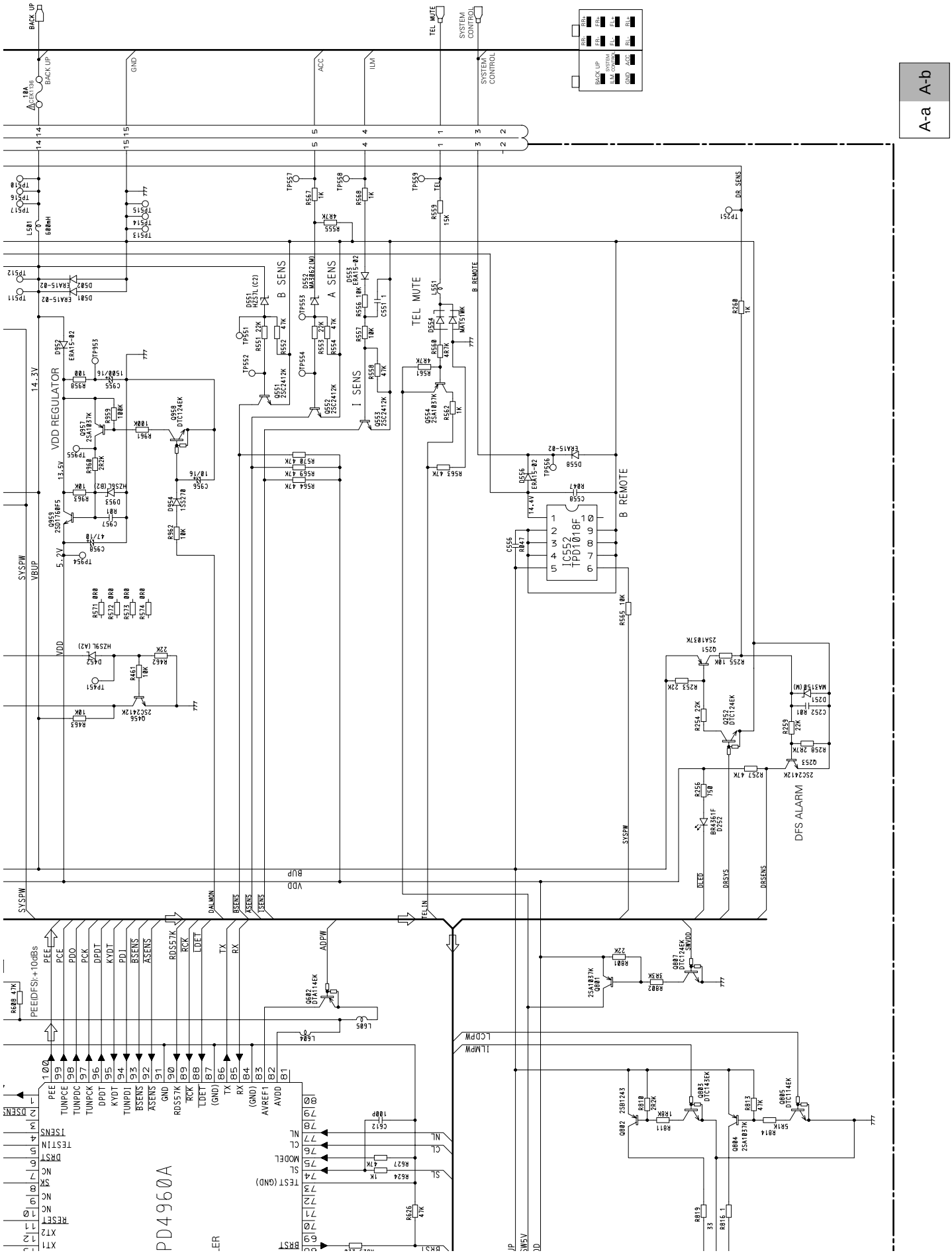
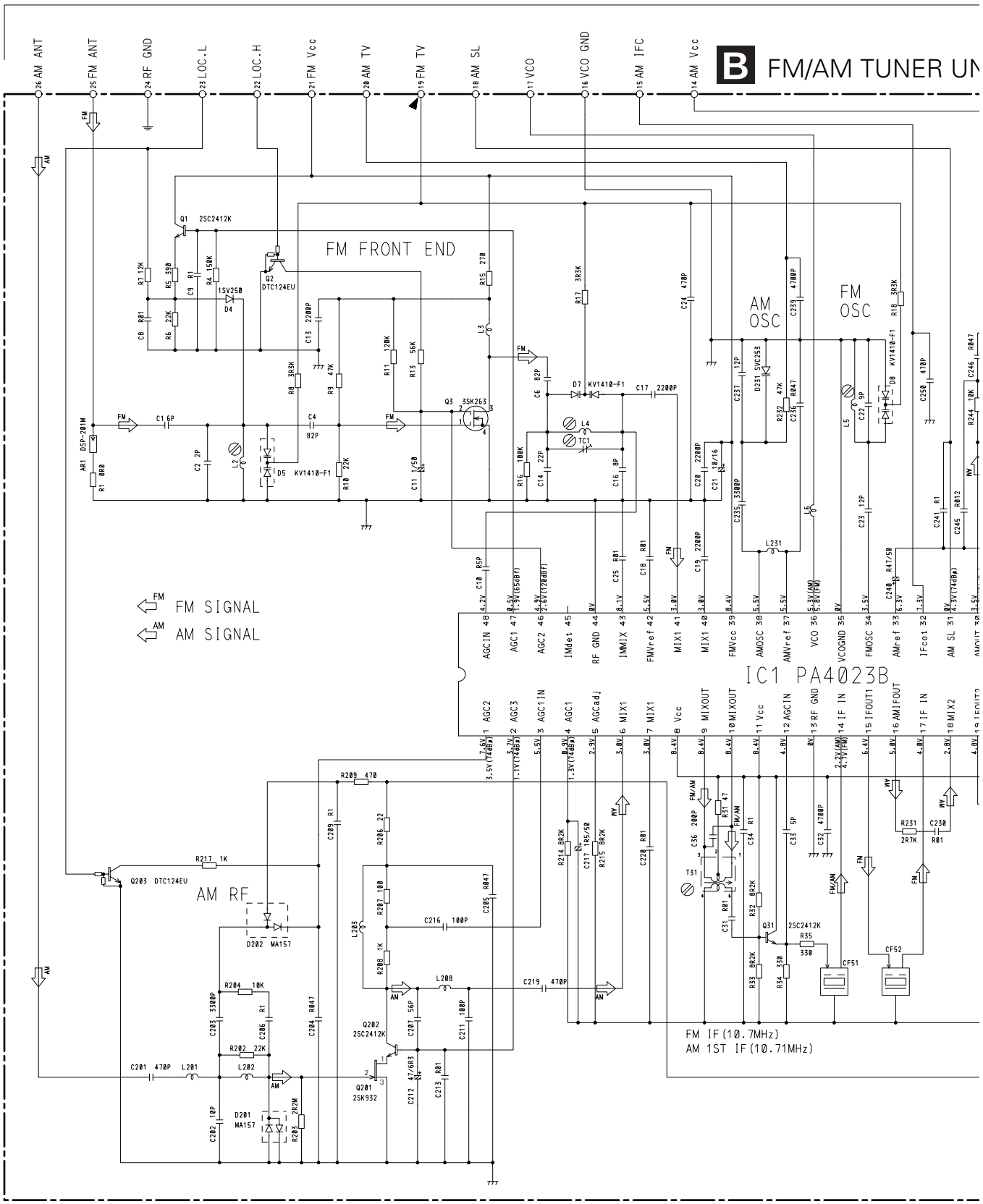
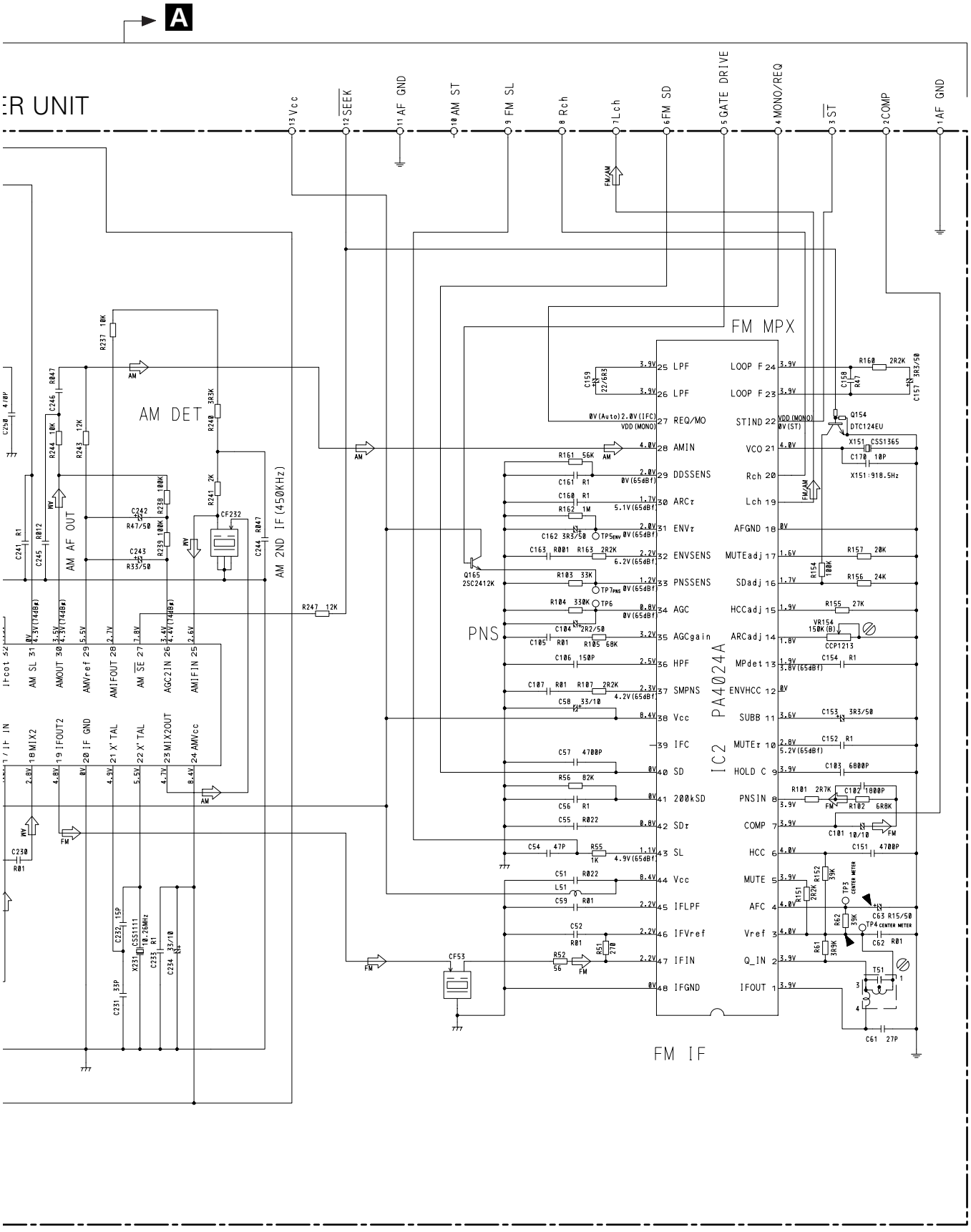
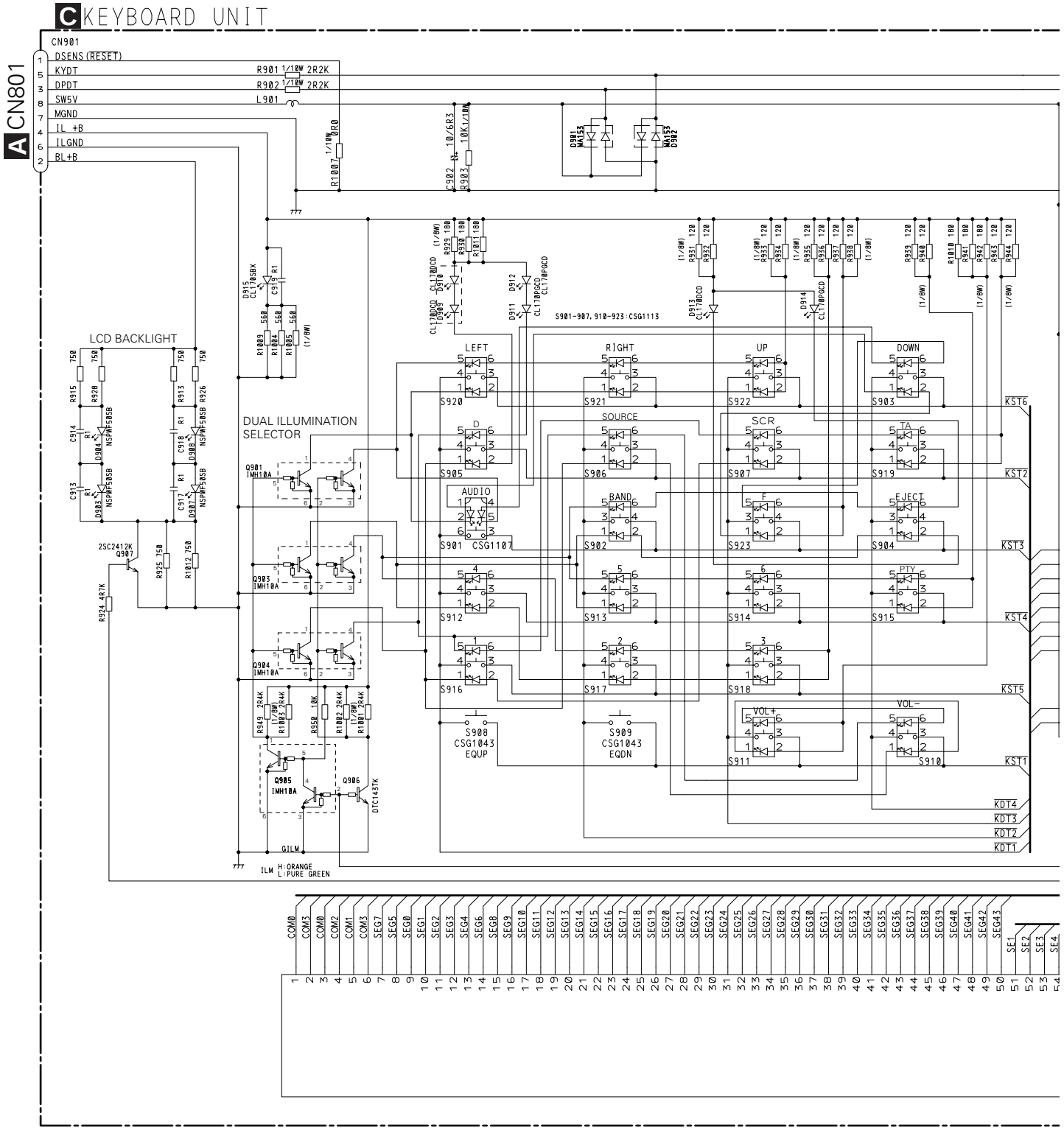

A-a A-b
BACK UP
GND
ACC
ILM
SYSTEM CONTROL
TEL MUTE
B SENS
A SENS
I SENS
VDD REGULATOR
B REMOTE
DFS ALARM
IC552 TPD1018F
PD4960A

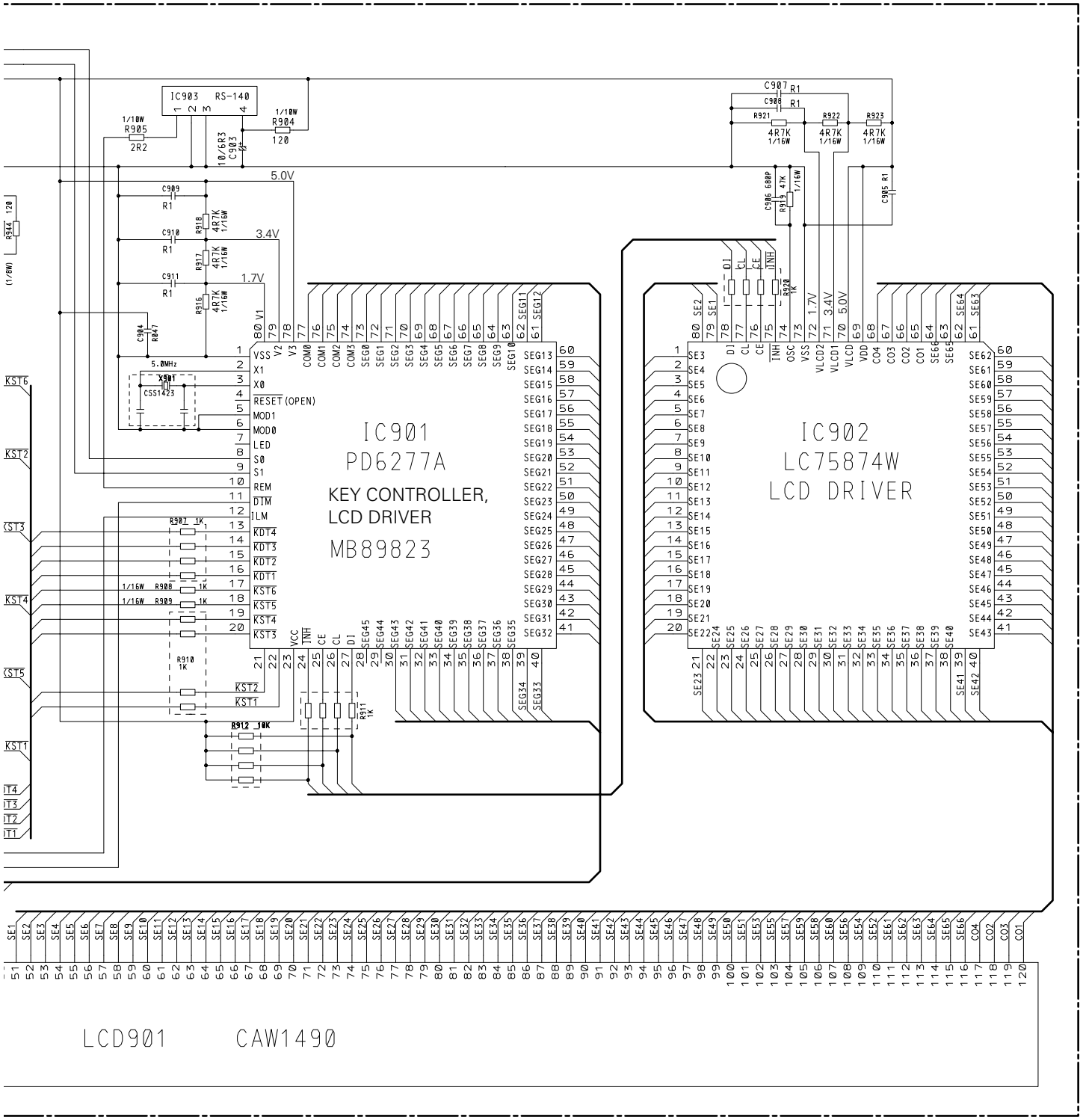
3.2 FM/AM TUNER UNIT



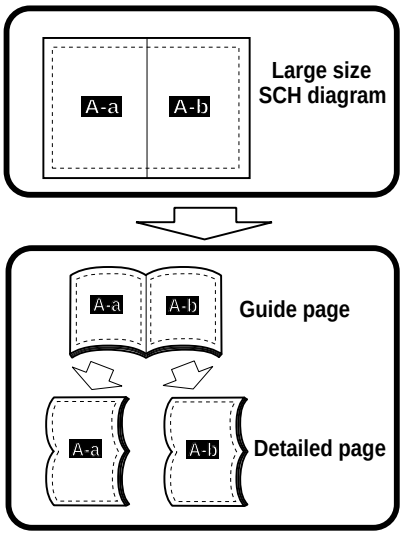

A
ER UNIT
13 Vcc
12 SEEK
11 AF GND
10 AM ST
9 FM SL
8 Rch
7 Lch
6 FM SD
5 GATE DRIVE
4 MONO/REQ
3 ST
2 COMP
1 AF GND
FM MPX
AM DET
AM AF OUT
AM 2ND IF (450KHz)
PNS
IC2 PA4024A
FM IF
25 LPF
26 LPF
27 REQ/MO
28 AMIN
29 DDSSENS
30 ARCr
31 ENVr
32 ENVSENS
33 PNSSENS
34 AGC
35 AGCgain
36 HPF
37 SMPNS
38 Vcc
39 IFC
40 SD
41 200kSD
42 SDr
43 SL
44 Vcc
45 IFLPF
46 IFVref
47 IFIN
48 IFGND
LOOP F 24
LOOP F 23
STIND 22
VCO 21
Rch 20
Lch 19
AFGND 18
MUTEadj 17
SDadj 16
HCCadj 15
ARCadj 14
MPdet 13
ENVHCC 12
SUBB 11
MUTEr 10
HOLD C 9
PNSIN 8
COMP 7
HCC 6
MUTE 5
AFC 4
Vref 3
Q_IN 2
IFOUT 1
Q165 2SC2412K
Q154 DTC124EU
X151 CSS1365
X151:918.5Hz
CF232
CF53
X231 CSS1111 10.26MHz
TP5ENV
TP7PNS
TP6
TP3 CENTER METER
TP4 CENTER METER
T51

3.3 KEYBOARD UNIT



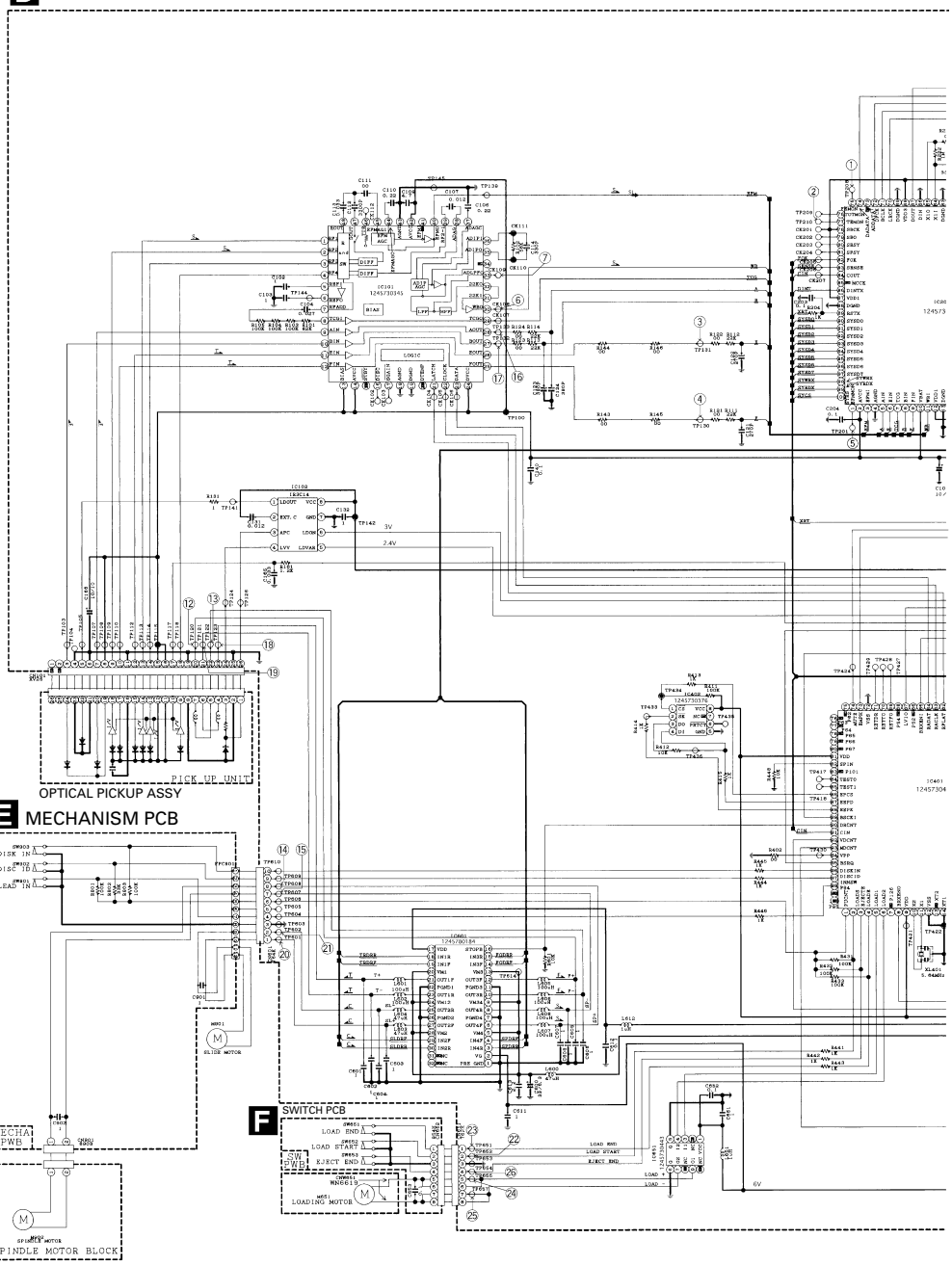

IC901
PD6277A
KEY CONTROLLER,
LCD DRIVER
MB89823
IC902
LC75874W
LCD DRIVER
IC903 RS-140
LCD901 CAW1490
5.0V
3.4V
1.7V
5.0MHz
X901
CSS1423
RESET (OPEN)

3.4 MD MECHANISM MODULE

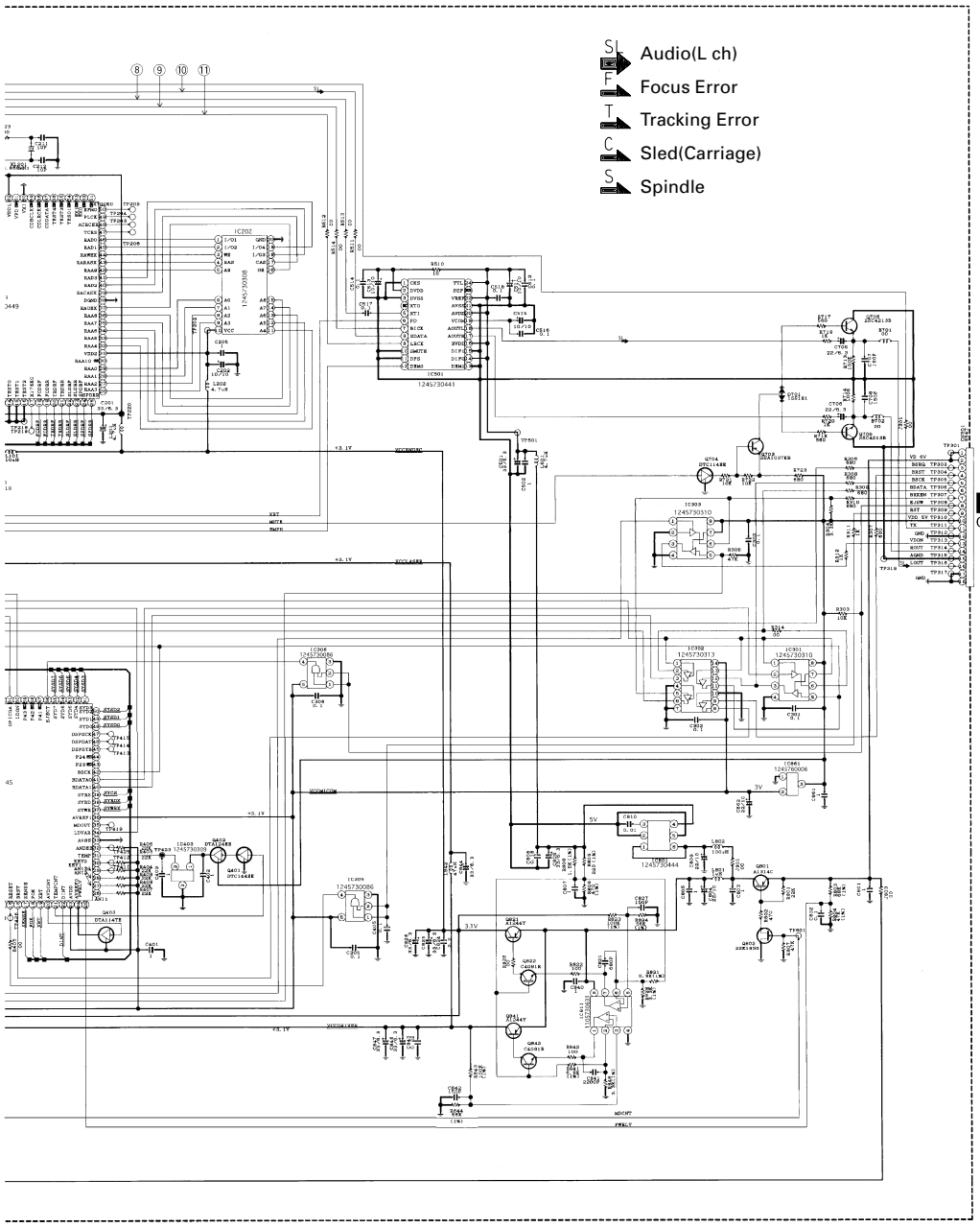


D-a

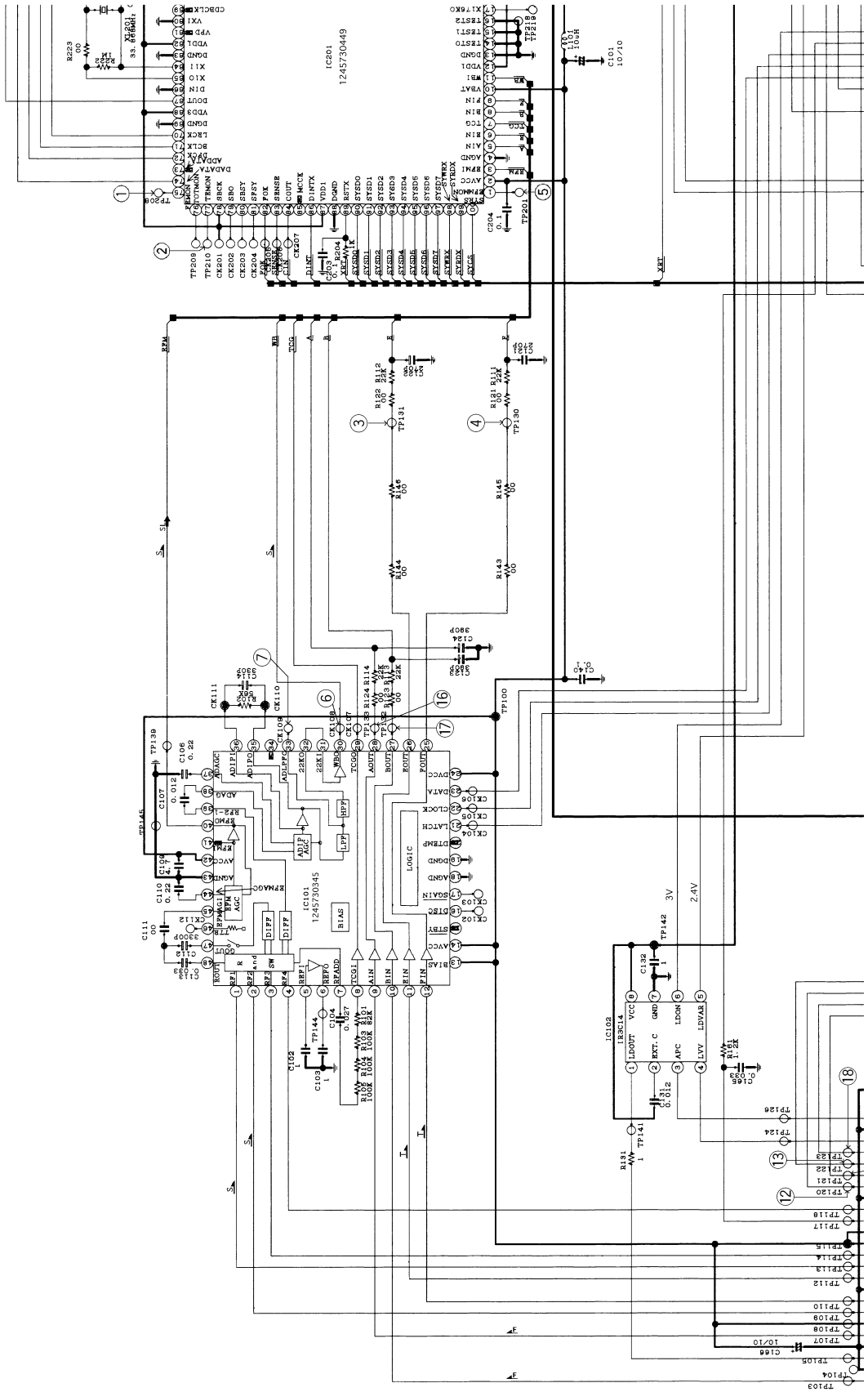
D MAIN PCB



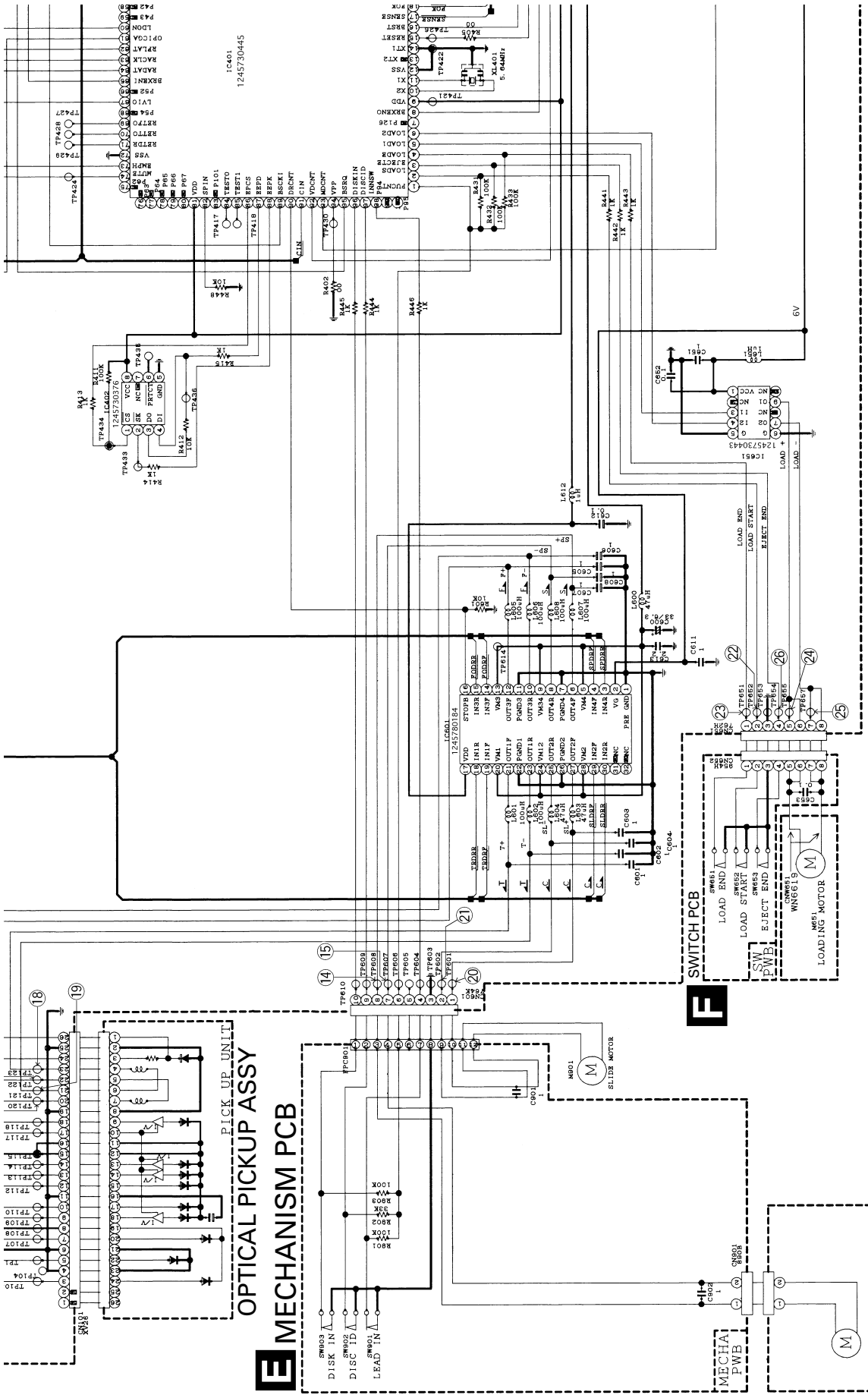
D-b


S Audio(L ch)
F Focus Error
T Tracking Error
C Sled(Carriage)
S Spindle
A
CN201

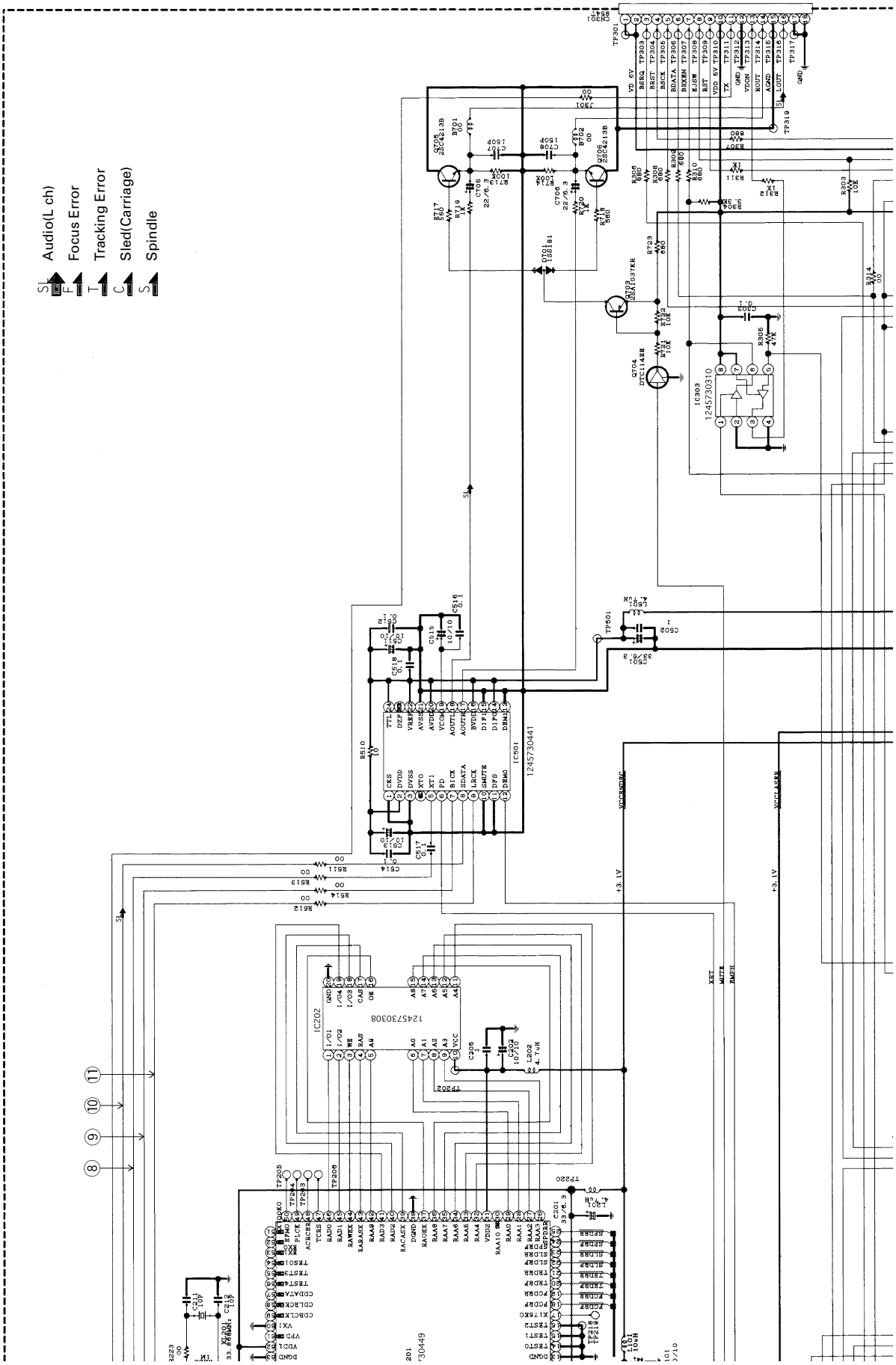
D-a D-b

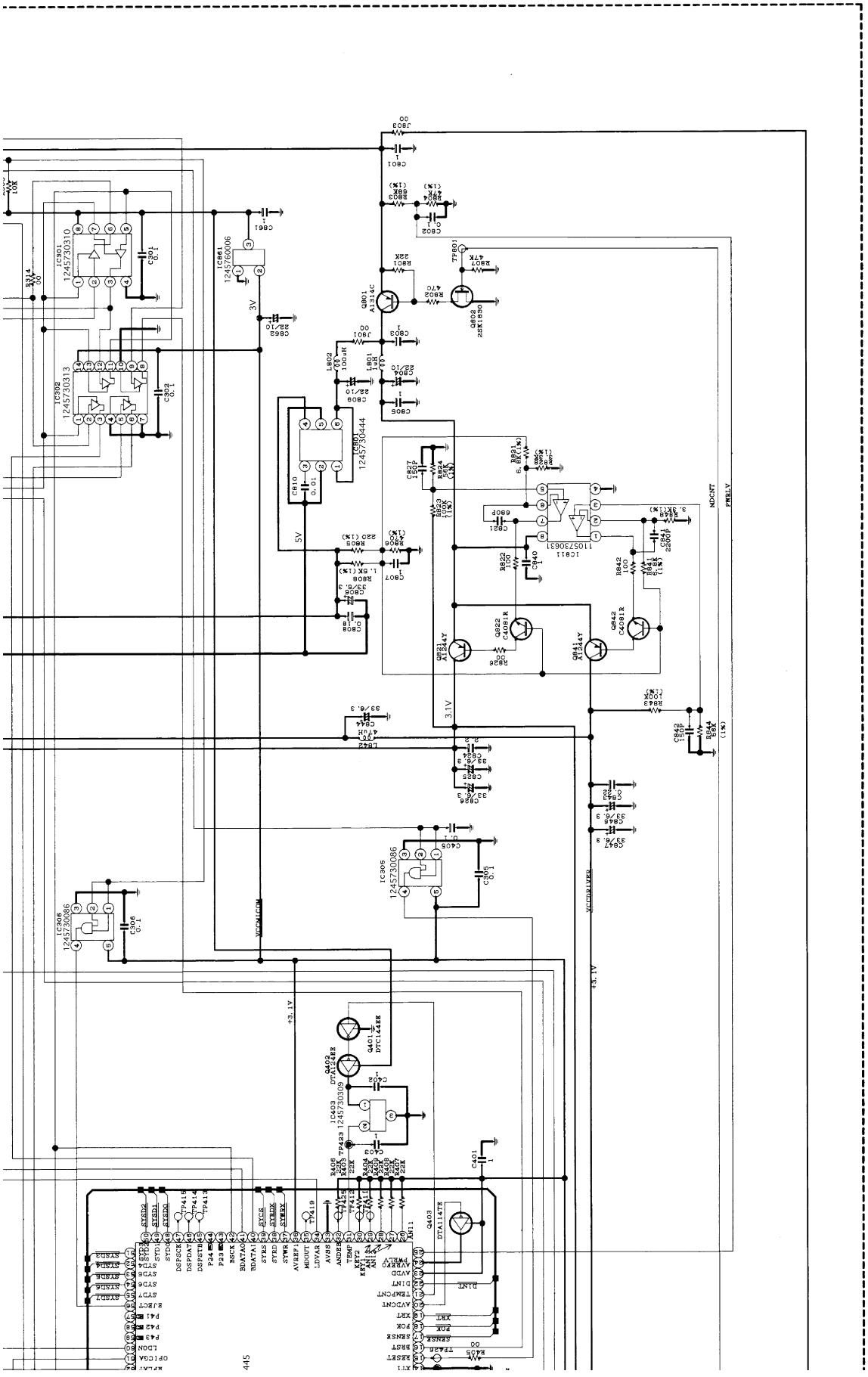


D MAIN PCB


D-a D-b
IC401
1245730445
IC651
1245730443
IC601
1245780184
IC602
1245730376
SWITCH PCB
LOAD END
LOAD START
EJECT END
LOADING MOTOR
MECHANISM PCB
OPTICAL PICKUP ASSY
PICK UP UNIT
SLIDE MOTOR
SPINDLE MOTOR BLOCK
MECHA PWB
SW PWB
DISK IN
DISC ID
LEAD IN
6V
LOAD +
LOAD -
LOAD END
LOAD START
EJECT END

D-a D-b

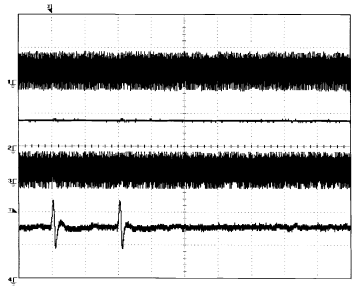

A
CN201
Audio(L ch)
Focus Error
Tracking Error
Sled(Carriage)
Spindle
IC501
1245730441
IC202
1245730308
IC303
1245730310
+3.1V
VCCENDAC
VCCLASSD



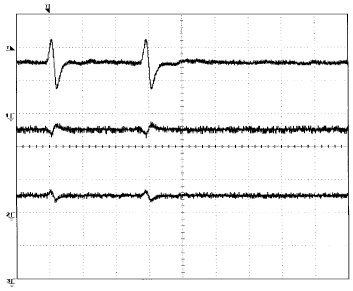
Note: The encircled numbers denote measuring pointes in the circuit diagram.

● Waveforms

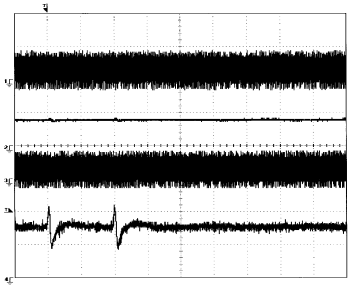
① CH1 : FEMON 5V/div 2ms/div
① CH2 : FEMON+LPF 2V/div 2ms/div
② CH3 : TEMON 5V/div 2ms/div
② CH4 : TEMON+LPF 2V/div 2ms/div
Normal mode : play
Disc : Recordable



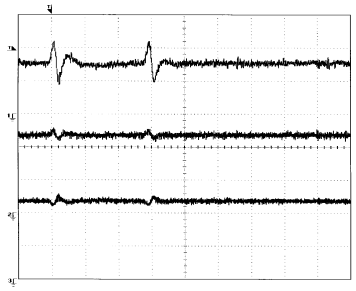
② CH1 : TEMON+LPF 1V/div 1ms/div
③ CH2 : E 500mV/div 1ms/div
④ CH3 : F 500mV/div 1ms/div
Normal mode : play
Disc : Recordable



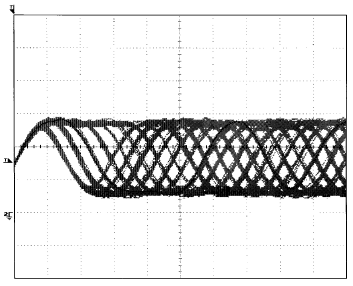
① CH1 : FEMON 1V/div 2ms/div
① CH2 : FEMON+LPF 500mV/div 2ms/div
② CH3 : TEMON 500mV/div 2ms/div
② CH4 : TEMON+LPF 500mV/div 2ms/div
Normal mode : play
Disc : Premastered



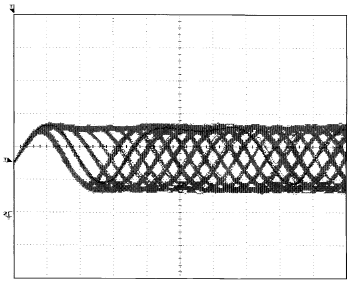
② CH1 : TEMON+LPF 1V/div 1ms/div
③ CH2 : E 500mV/div 1ms/div
④ CH3 : F 500mV/div 1ms/div
Normal mode : play
Disc : Premastered



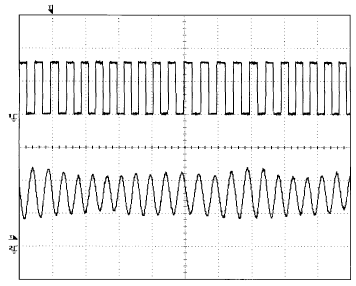
⑤ CH1 : EFM 1V/div 500ns/div
Test mode : play
Disc : Recordable



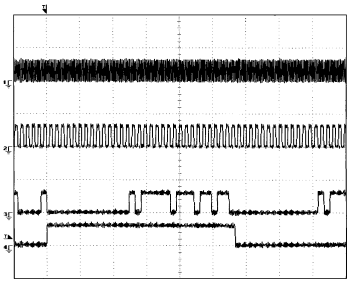
⑤ CH1 : EFM 1V/div 500ns/div
Test mode : play
Disc : Premastered



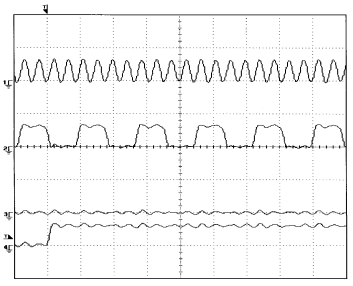
⑥ CH1 : WBO 2V/div 100ms/div
⑦ CH2 : ADLPFO 1V/div 100ms/div
Test mode : play
Disc : Recordable

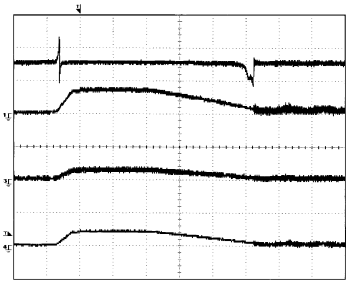
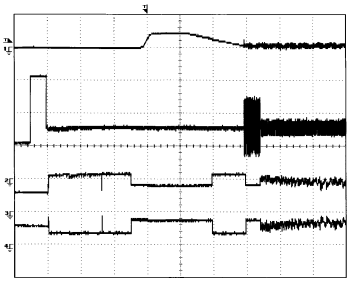
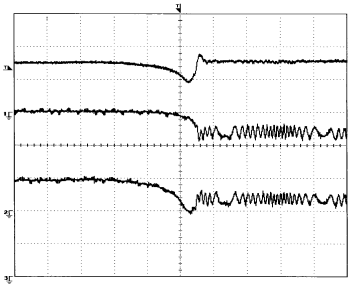
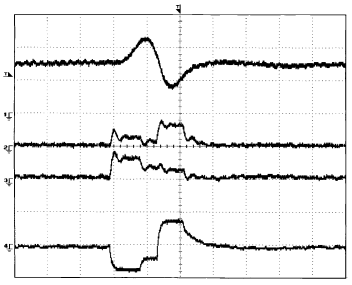
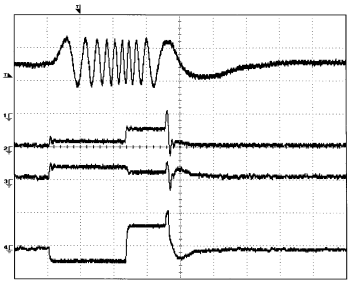
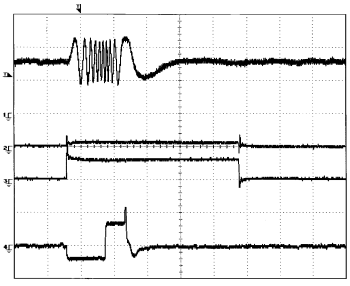
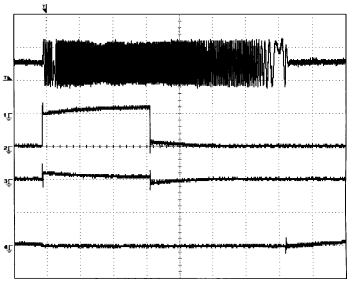
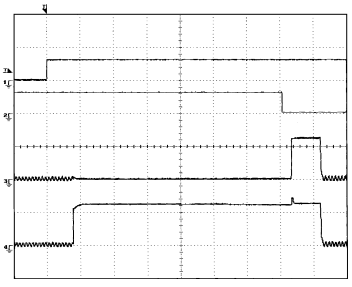
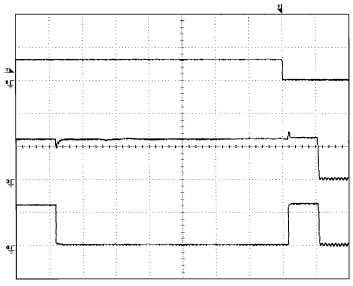


⑧ CH1 : DFCK 5V/div 2ms/div
⑨ CH2 : BCLK 5V/div 2ms/div
⑩ CH3 : DADATA 5V/div 2ms/div
⑪ CH3 : LRCK 5V/div 2ms/div
Normal mode : play
Disc : Recordable



⑧ CH1 : DFCK 5V/div 200ns/div
⑨ CH2 : BCLK 5V/div 200ns/div
⑩ CH3 : DADATA 5V/div 200ns/div
⑪ CH4 : LRCK 5V/div 200ns/div
Normal mode : play
Disc : Recordable



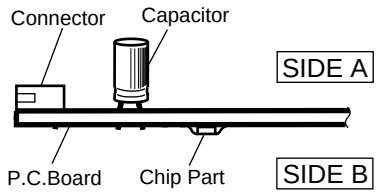
① CH1 : FEMON+LPF 1V/div 100ms/div ⑫ CH2 : F+ 2V/div 100ms/div ⑬ CH3 : F- 2V/div 100ms/div ⑫⑬ CH4 : F+ - F- 2V/div 100ms/div Focus close Disc : Recordable 	⑫⑬ CH1 : F+ - F- 2V/div 200ms/div ② CH2 : TEMON+LPF 1V/div 200ms/div ⑭ CH3 : SP+ 2V/div 200ms/div ⑮ CH4 : SP- 2V/div 200ms/div Focus close Disc : Recordable 	① CH1 : FEMON+LPF 1V/div 10ms/div ⑯ CH2 : A 500mV/div 10ms/div ⑰ CH3 : B 500mV/div 10ms/div Focus close Disc : Recordable 
② CH1 : TEMON+LPF 1V/div 200ms/div ⑱ CH2 : T+ 2V/div 200ms/div ⑲ CH3 : T- 2V/div 200ms/div ⑱⑲ CH4 : T+ - T- 2V/div 200ms/div Test mode : 1T REV jump Disc : Recordable 	② CH1 : TEMON+LPF 1V/div 500ms/div ⑱ CH2 : T+ 2V/div 500ms/div ⑲ CH3 : T- 2V/div 500ms/div ⑱⑲ CH4 : T+ - T- 2V/div 500ms/div Test mode : 10T REV jump Disc : Recordable 	② CH1 : TEMON+LPF 1V/div 1ms/div ⑳ CH2 : SL+ 2V/div 1ms/div ㉑ CH3 : SL- 2V/div 1ms/div ⑳㉑ CH4 : T+ - T- 2V/div 1ms/div Test mode : 10T REV jump Disc : Recordable 
② CH1 : TEMON+LPF 1V/div 20ms/div ⑳ CH2 : SL+ 2V/div 20ms/div ㉑ CH3 : SL- 2V/div 20ms/div ⑳㉑ CH4 : T+ - T- 2V/div 20ms/div Test mode : 400T REV jump Disc : Recordable 	㉒ CH1 : LOADSTART 5V/div 200ms/div ㉓ CH2 : LOADEND 5V/div 200ms/div ㉔ CH3 : L+ 5V/div 200ms/div ㉕ CH3 : L- 5V/div 200ms/div Loading 	㉖ CH1 : EJECTEND 5V/div 200ms/div ㉔ CH2 : L+ 5V/div 200ms/div ㉕ CH3 : L- 5V/div 200ms/div Eject 

4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

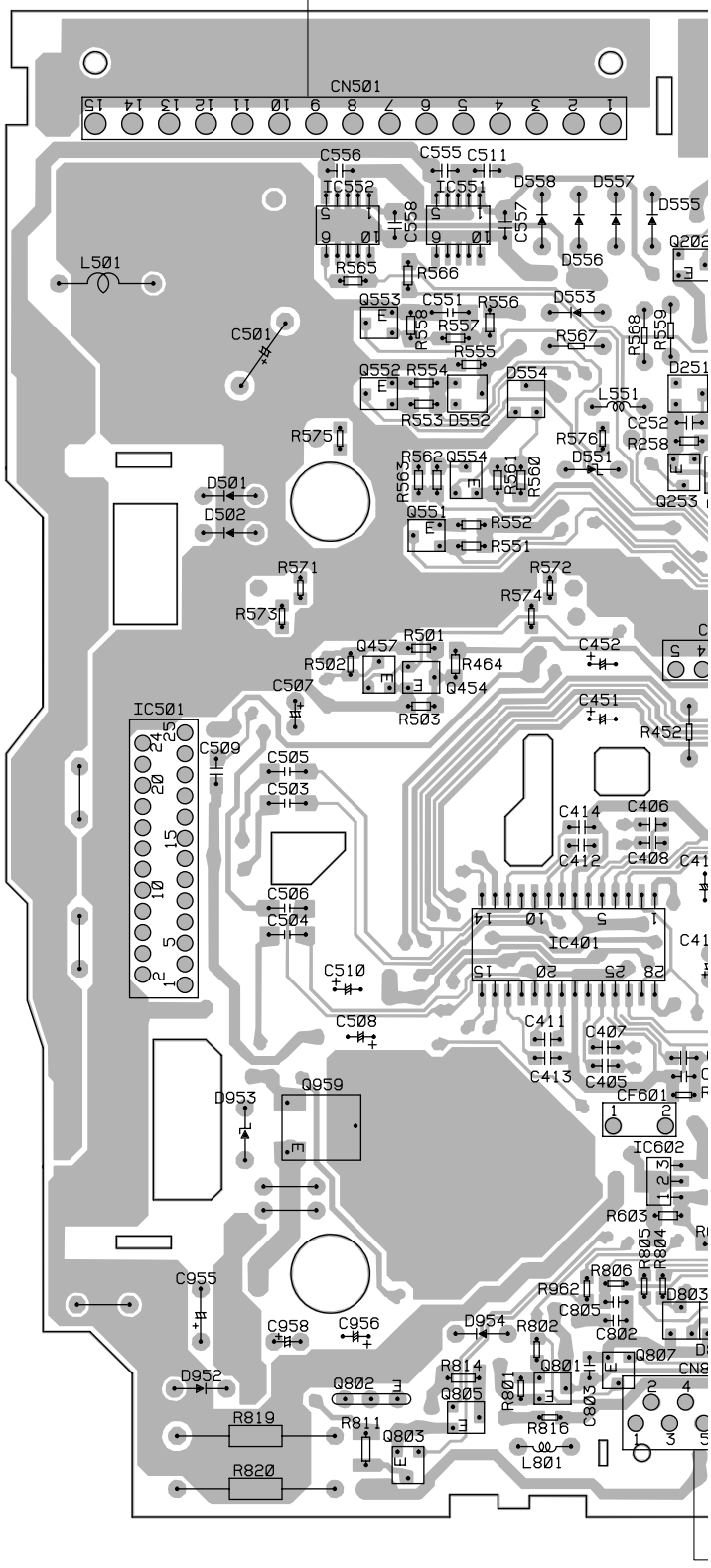
NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



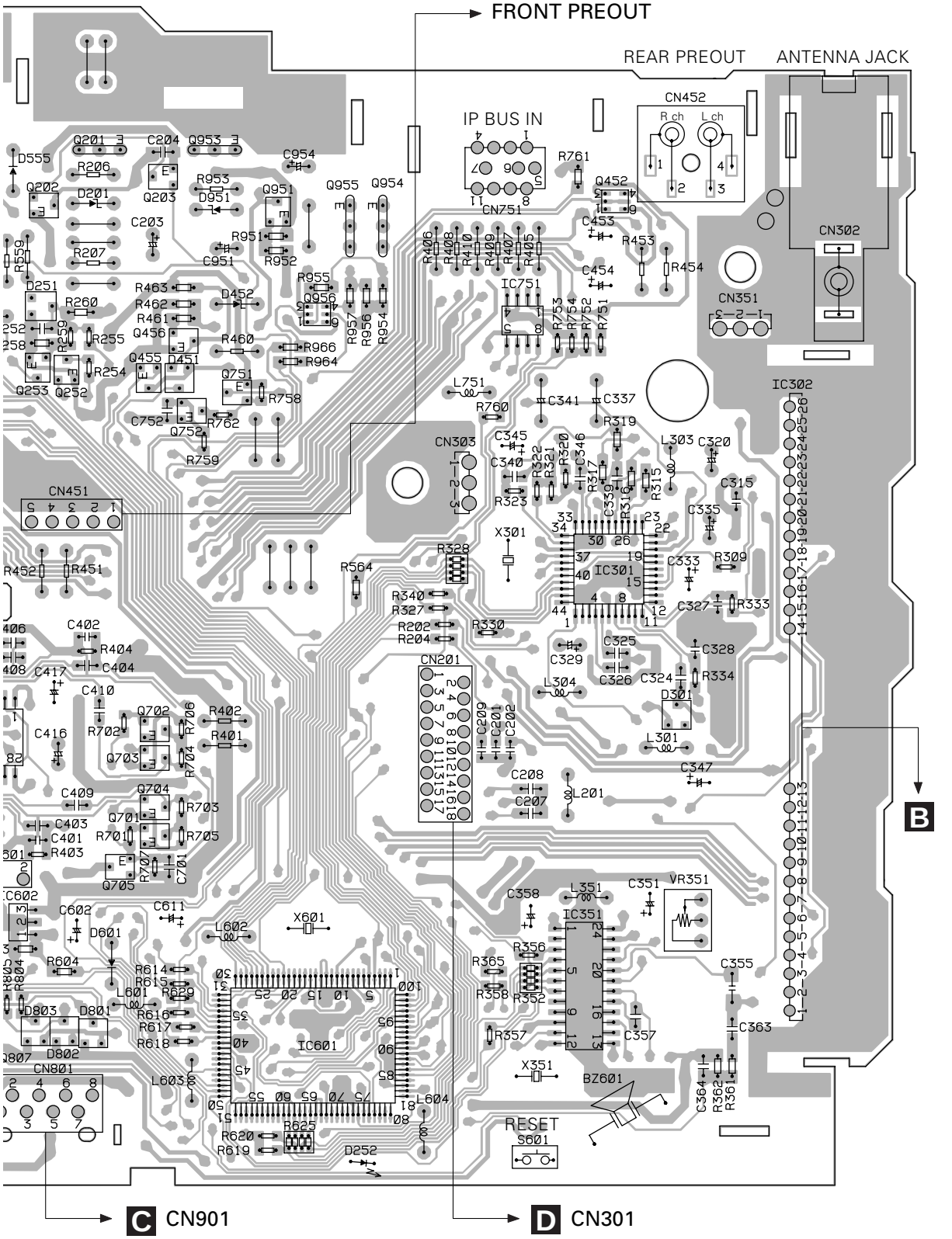
IC, Q	ADJ
Q201 Q953	
IC552 IC551	
Q452	
Q955 Q954	
Q202 Q203 Q951	
Q553	
Q552 IC751	
Q956	
Q456	
Q554 Q455	
Q751	
Q252 IC302	
Q253 Q551	
Q752	
Q457	
Q454	
IC501	
IC301	
Q702	
IC401	
Q703	
Q704	
Q701	
Q959	
IC602 Q705	VR351
IC351	
IC601	
Q807	
Q801	
Q802 Q805	
Q803	

A TUNER AMP UNIT → CORD ASSY



A

SIDE A

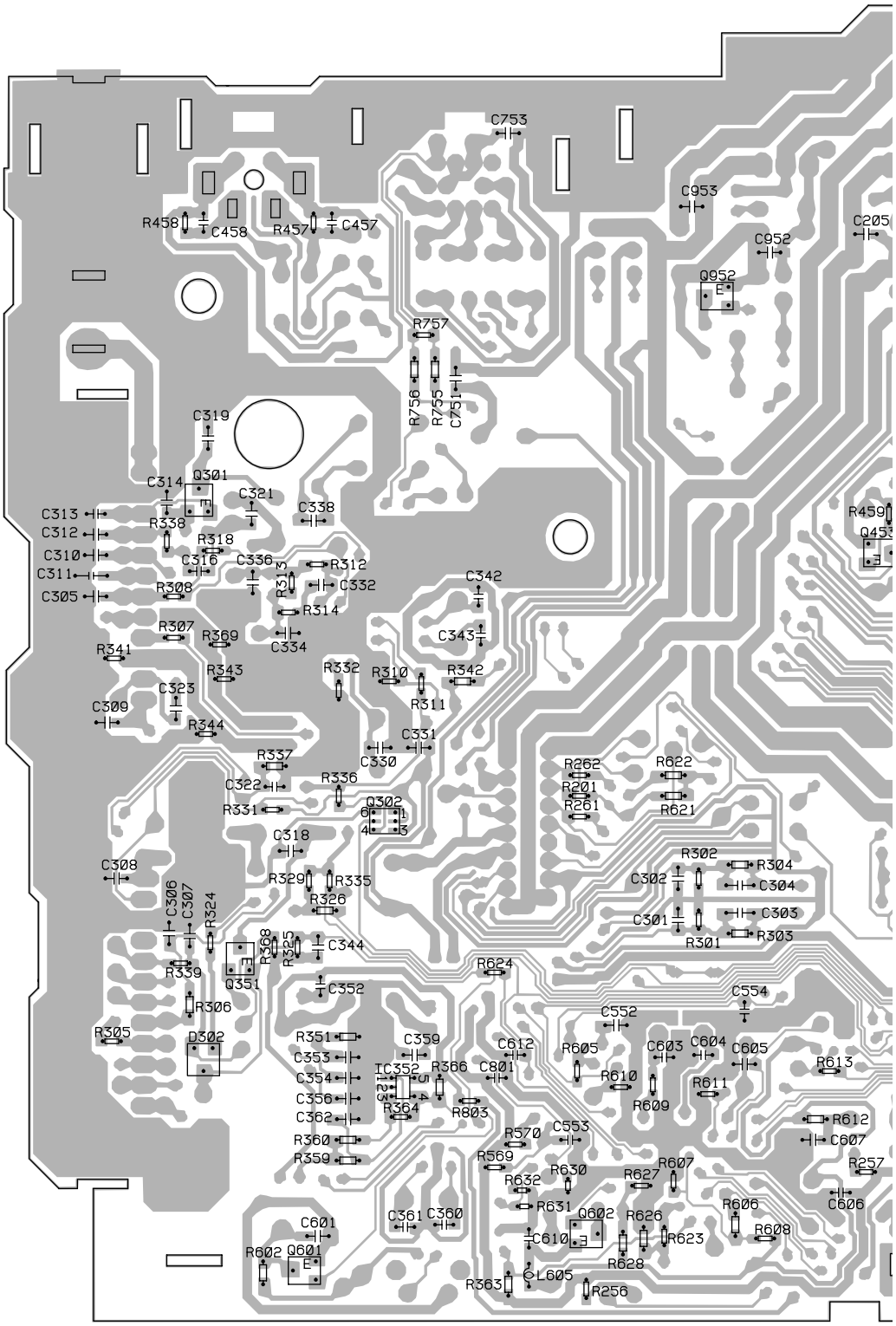

FRONT PREOUT
REAR PREOUT
ANTENNA JACK
IP BUS IN
CN452
R ch
L ch
CN751
CN302
CN351
IC751
IC302
IC301
IC201
IC351
IC601
CN451
CN303
CN201
CN801
CN901
CN301
X301
X601
X351
BZ601
VR351
RESET
S601
D252
C CN901
D CN301
B

B

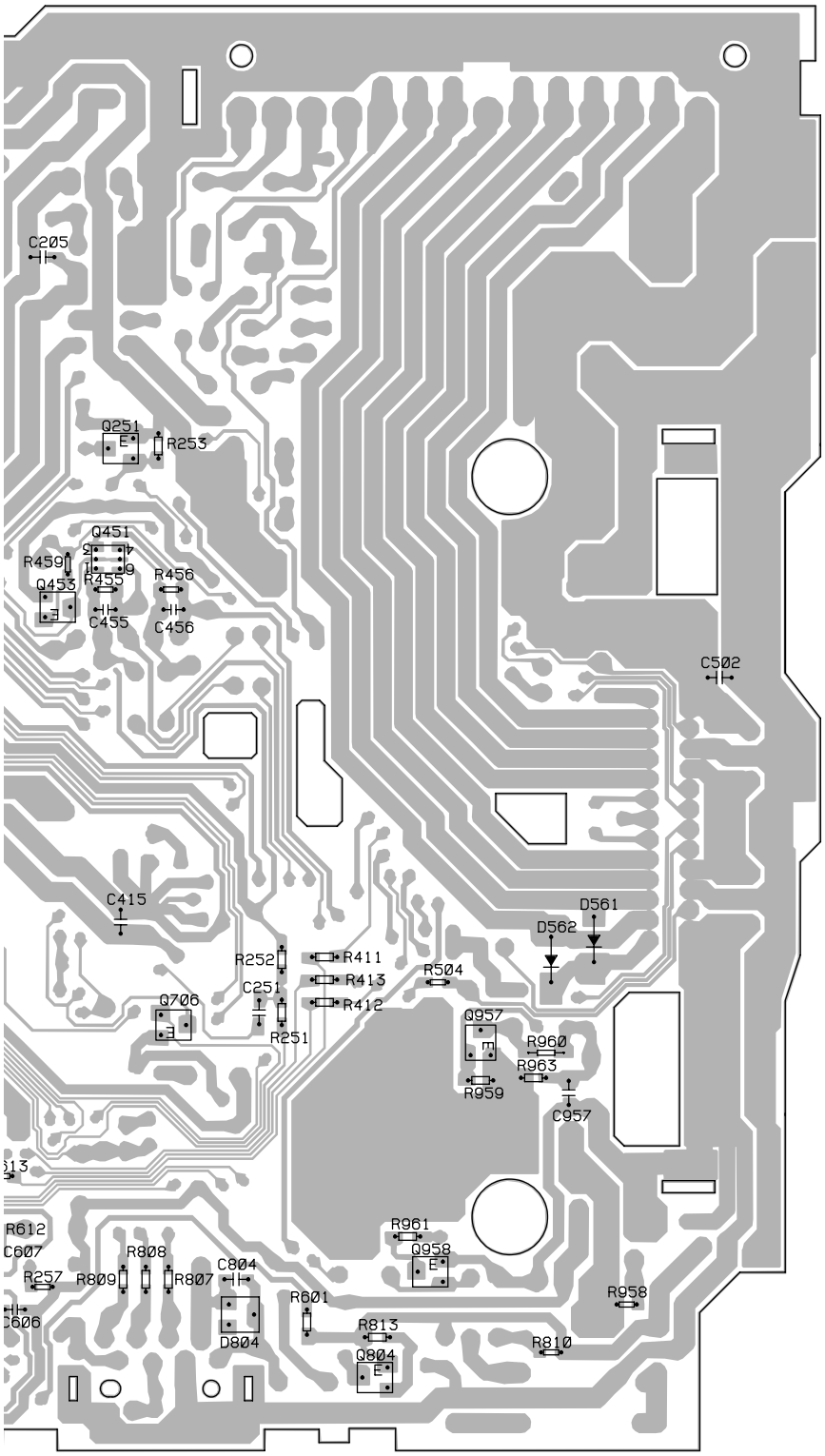
C

D

A TUNER AMP UNIT



SIDE B



IC, Q

Q952

Q251

Q301
Q451

Q453

Q302

Q706
Q957

Q351

IC352

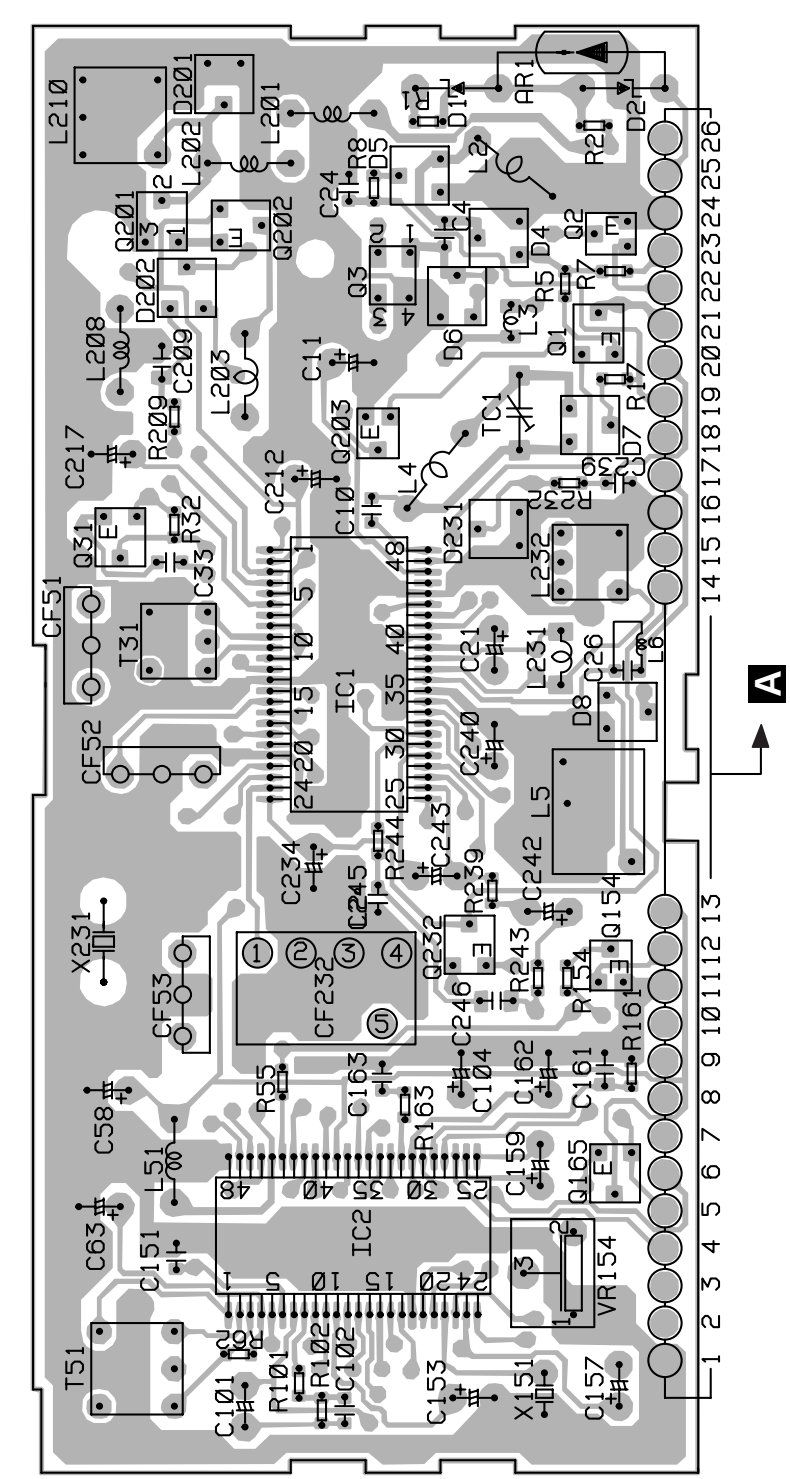
Q958

Q602
Q804
Q601

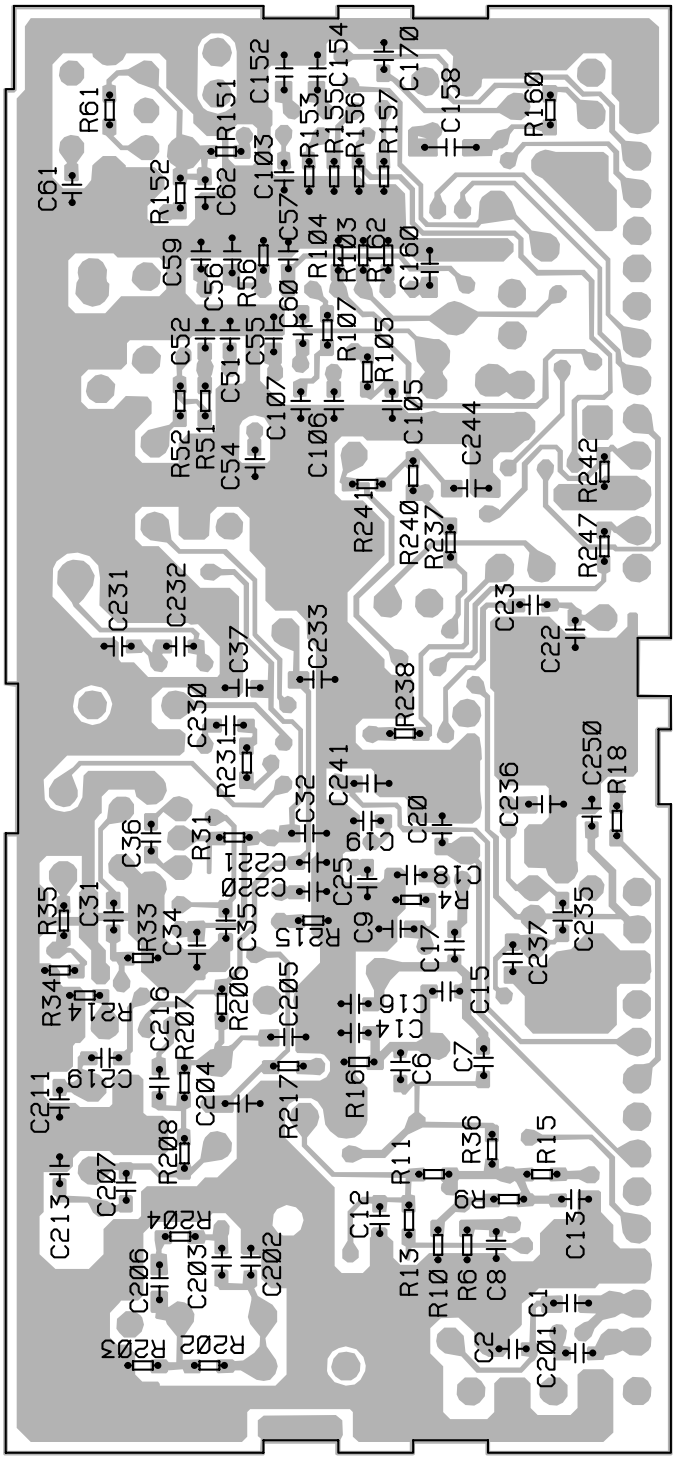
A B C D

4.2 FM/AM TUNER UNIT

SIDE A



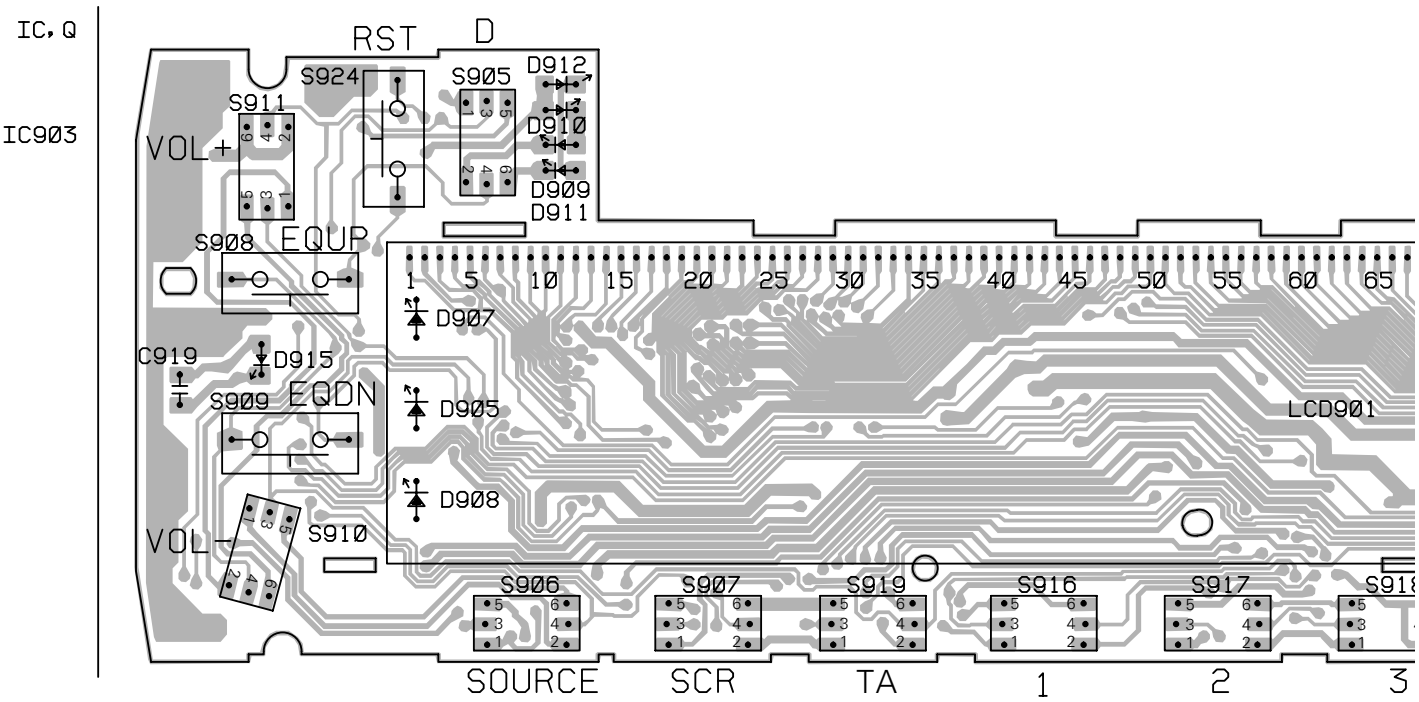
SIDE B



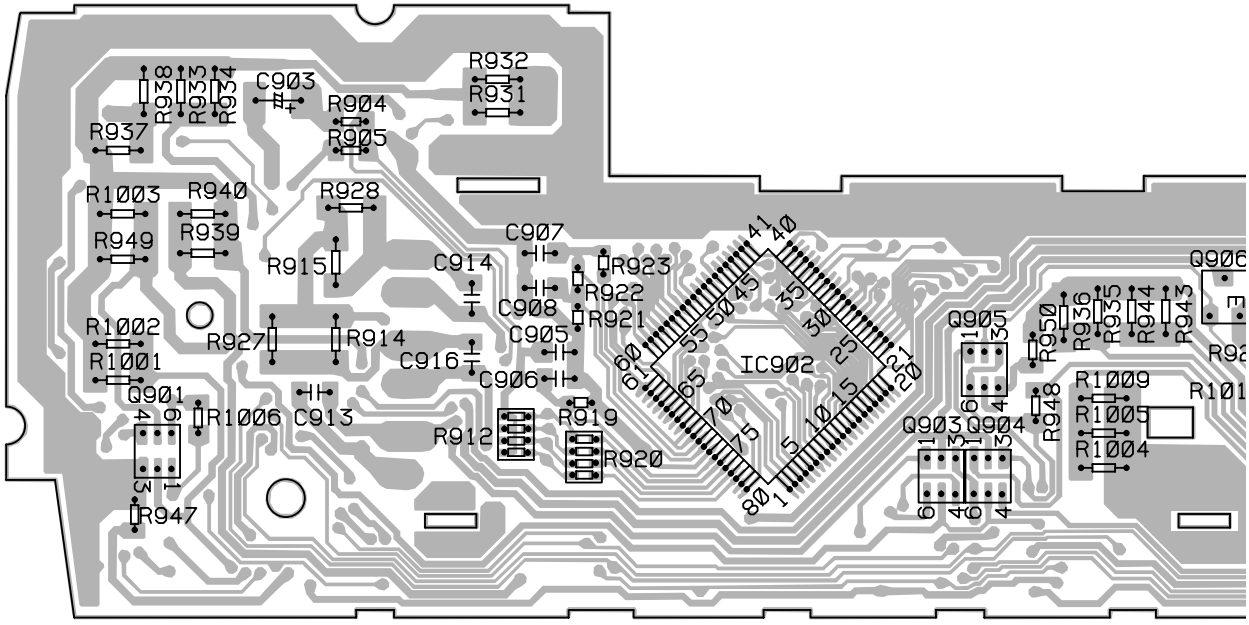
B FM/AM TUNER UNIT

4.3 KEYBOARD UNIT

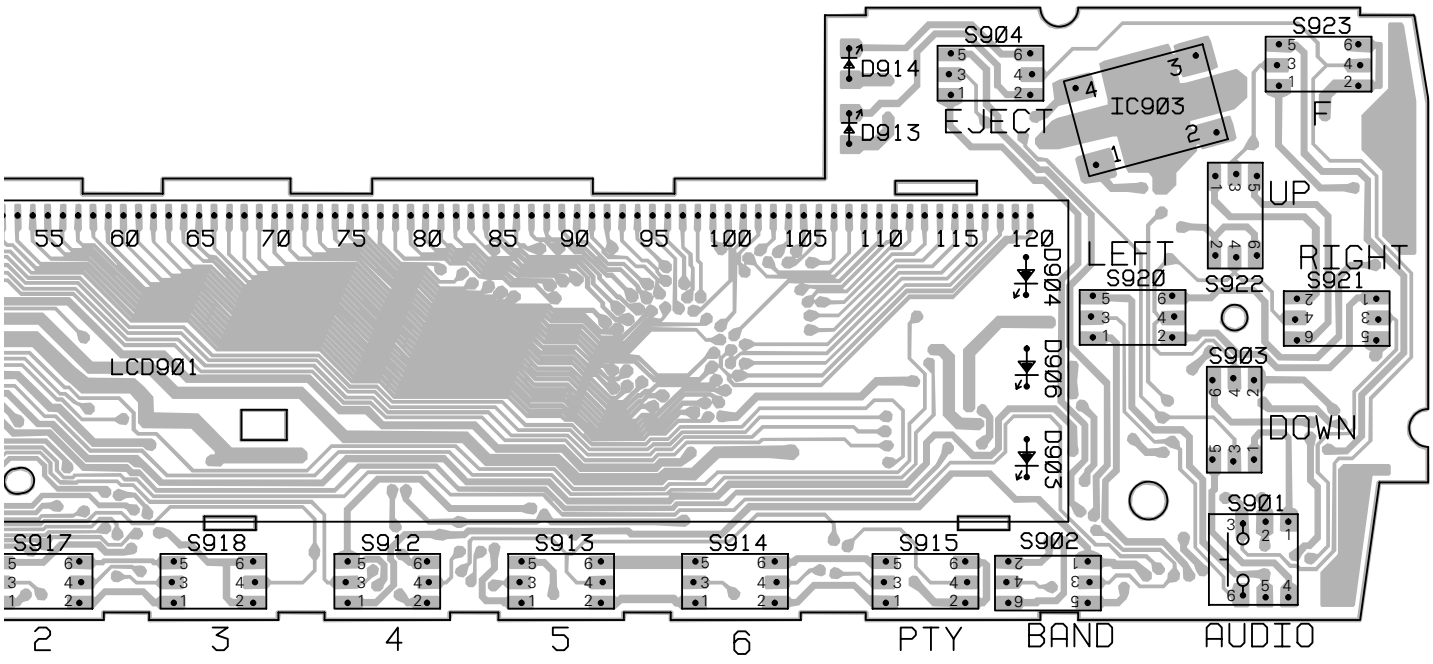
C KEYBOARD UNIT



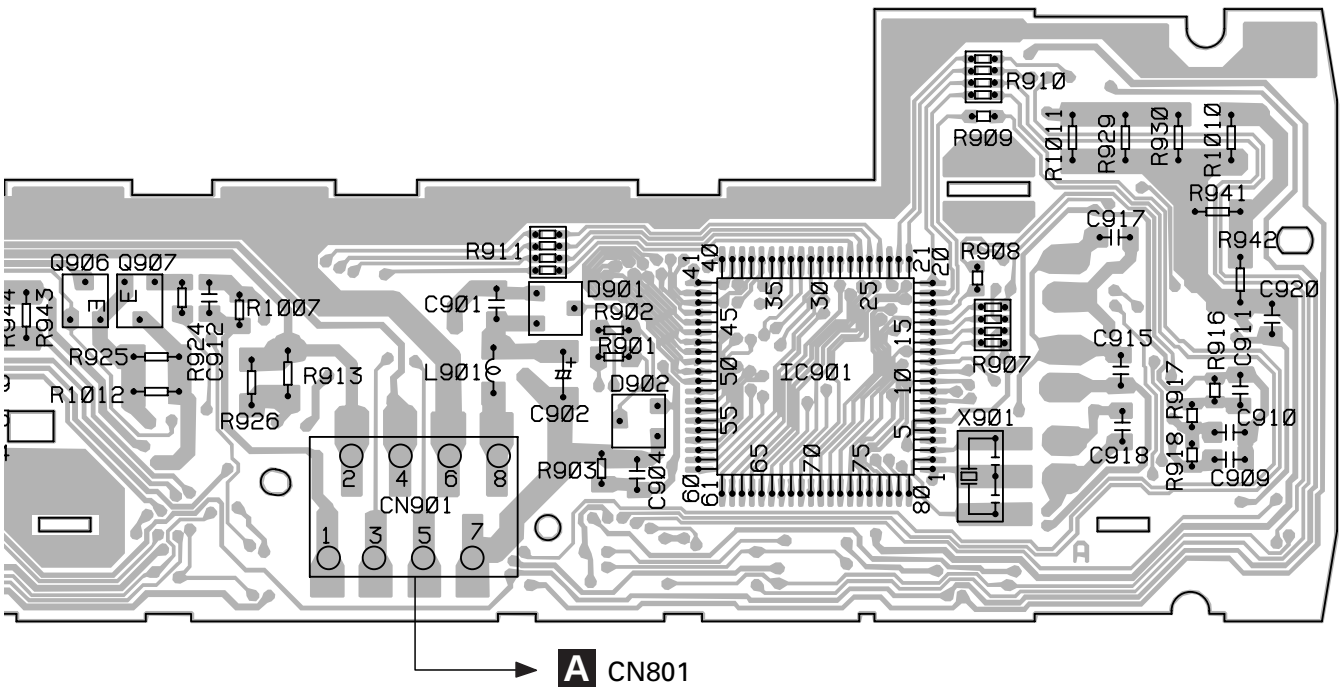
C KEYBOARD UNIT



SIDE A



SIDE B



IC, Q

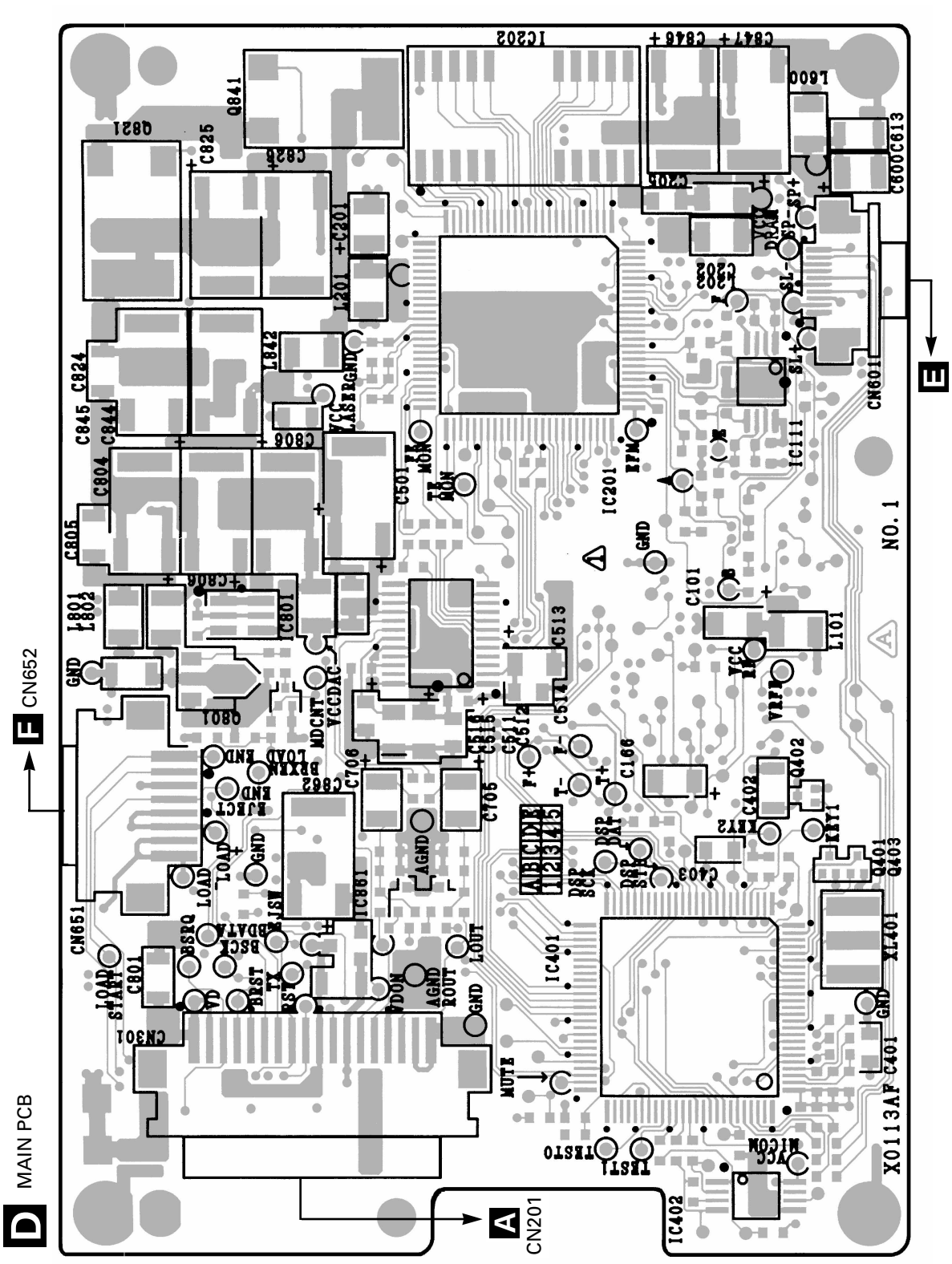
Q906 Q907

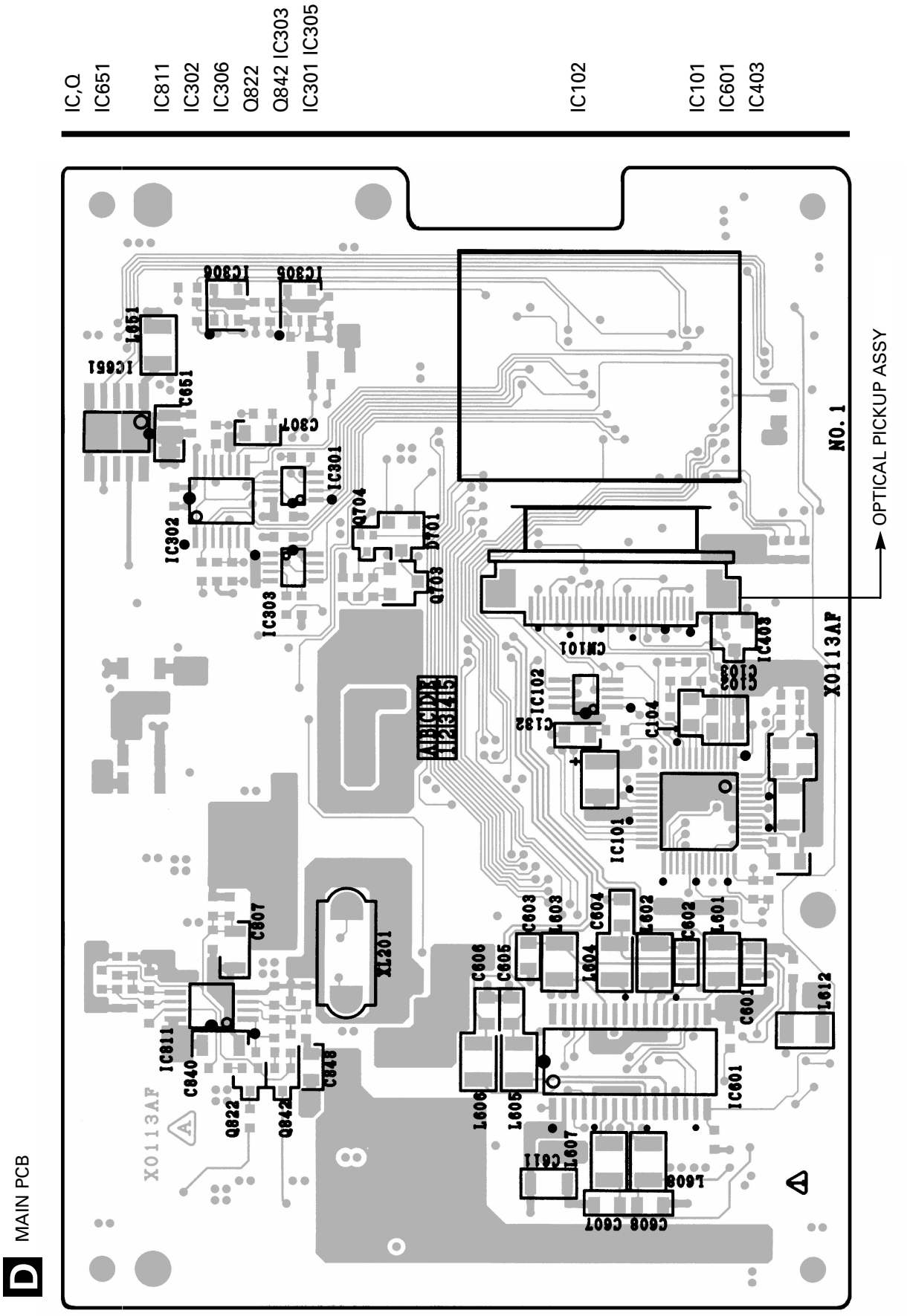
Q905
IC902 IC901
Q901

Q903 Q904

4.4 MAIN PCB

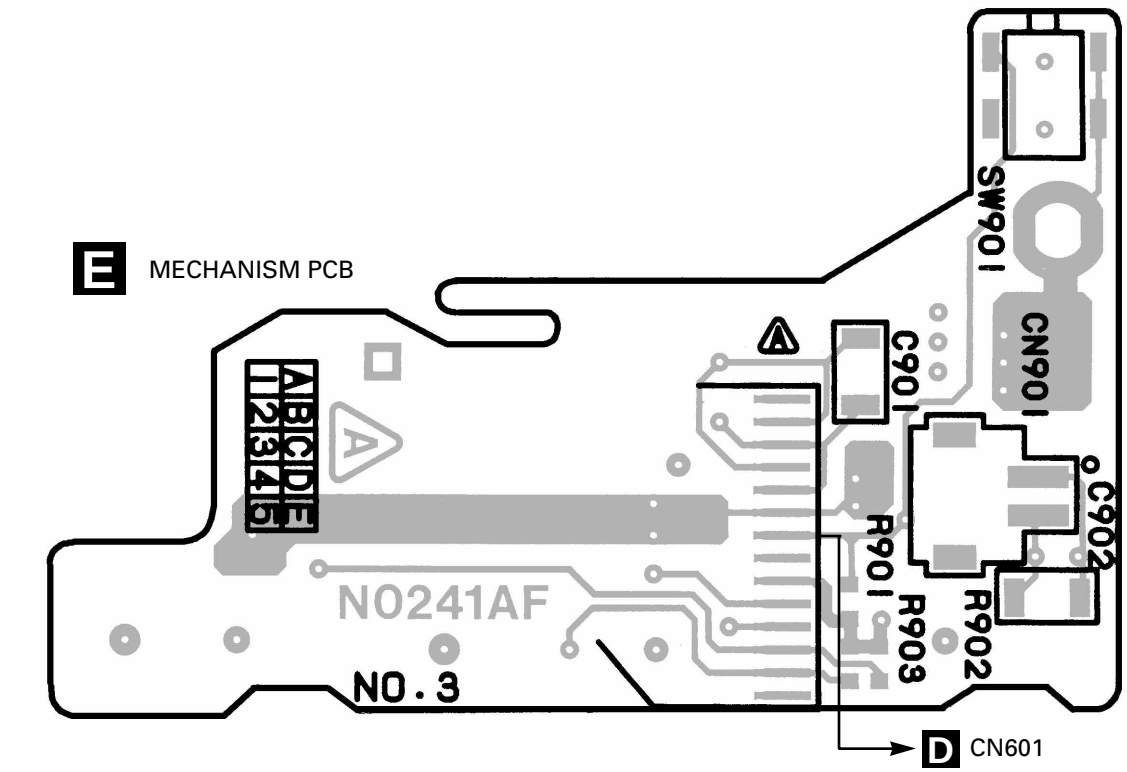
SIDE A

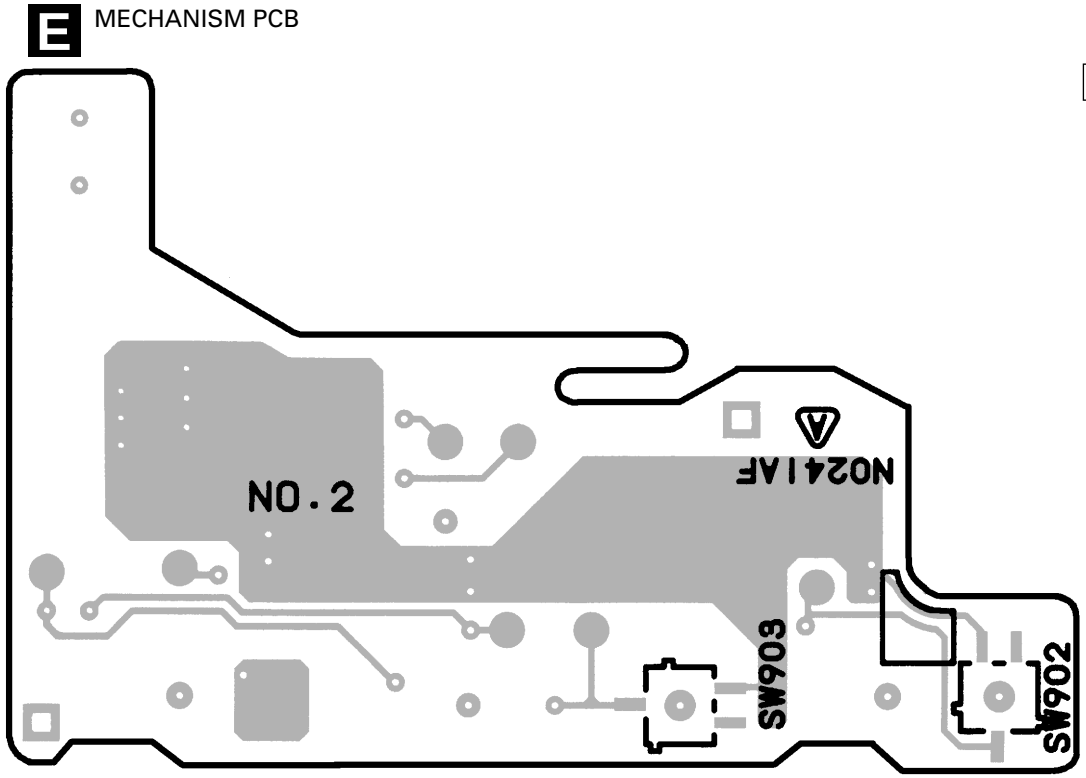



IC,Q
IC651
IC811
IC302
IC306
Q822
Q842 IC303
IC301 IC305
IC102
IC101
IC601
IC403
SIDE B
OPTICAL PICKUP ASSY
NO.1
X0113AF
MAIN PCB

4.5 MECHANISM PCB

SIDE A

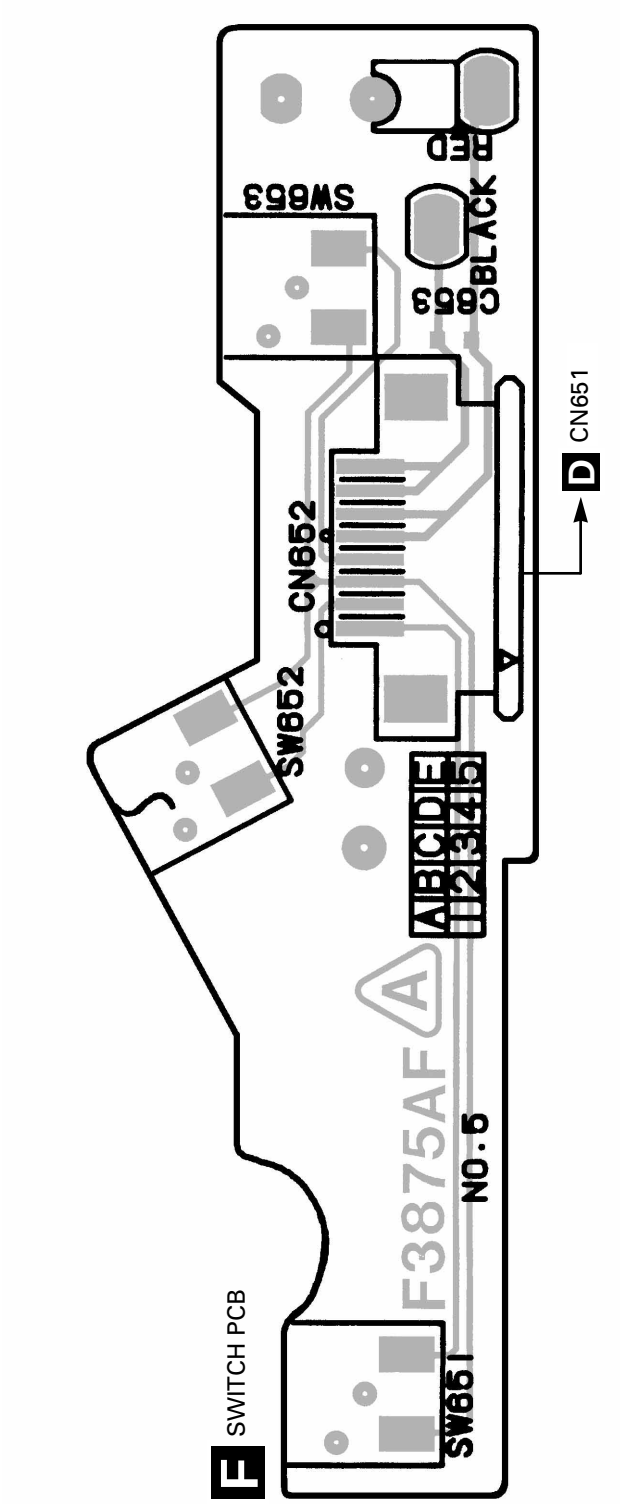




SIDE B

4.6 SWITCH PCB

SIDE A



5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/◯S◯◯◯J,RS1/◯◯S◯◯◯J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

Circuit Symbol & No.	Part Name	Part No.
B	Unit Number : CWE1416	
	Unit Name : FM/AM Tuner Unit	
MISCELLANEOUS		
IC 1	IC	PA4023B
IC 2	IC	PA4024A
Q 1	Transistor	2SC2412K
Q 2	Transistor	DTC124EU
Q 3	FET	3SK263
Q 31	Transistor	2SC2412K
Q 154	Transistor	DTC124EU
Q 165	Transistor	2SC2412K
Q 201	FET	2SK932
Q 202	Transistor	2SC2412K
Q 203	Transistor	DTC124EU
D 4	Diode	1SV250
D 5	Diode	KV1410-F1
D 7	Diode	KV1410-F1
D 8	Diode	KV1410-F1
D 201	Diode	MA157
D 202	Diode	MA157
D 231	Diode	SVC253
L 2	Coil	CTC1108
L 3	Inductor	LCTB2R2K2125
L 4	Coil	CTC1108
L 5	Coil	CTC1107
L 6	Inductor	LCTBR15K1608
L 51	Ferri-Inductor	LAU150K
L 201	Ferri-Inductor	LAU4R7K
L 202	Ferri-Inductor	LAU330K
L 203	Inductor	CTF1287
L 208	Inductor	LAU121K
L 231	Inductor	LCTA3R3J3225
T 31	Coil	CTE1116
T 51	Coil	CTC1136
TC 1		CCL1046
CF 51	Ceramic Filter	CTF1442
CF 52	Ceramic Filter	CTF1442
CF 53	Ceramic Filter	CTF1442
CF 232	Ceramic Filter	CTF1348
X 151	Resonator 918.5Hz	CSS1365
X 231	Crystal Resonator 10.26MHz	CSS1111
VR 154	Semi-fixed 150kΩ(B)	CCP1213
AR 1		DSP-201M
RESISTORS		
R 1		RS1/16S0R0J
R 4		RS1/16S154J
R 5		RS1/16S391J
R 6		RS1/16S223J
R 7		RS1/16S123J
R 8		RS1/16S332J
R 9		RS1/16S473J
R 10		RS1/16S223J
R 11		RS1/16S124J
R 13		RS1/16S563J
R 15		RS1/16S271J
R 16		RS1/16S104J
R 17		RS1/16S332J
R 18		RS1/16S332J
R 31		RS1/16S470J
R 32		RS1/16S822J
R 33		RS1/16S822J
R 34		RS1/16S331J
R 35		RS1/16S331J
R 51		RS1/16S271J
R 52		RS1/16S560J
R 55		RS1/16S102J
R 56		RS1/16S823J
R 61		RS1/16S392J
R 62		RS1/16S393J
R 101		RS1/16S272J
R 102		RS1/16S682J
R 103		RS1/16S333J
R 104		RS1/16S334J
R 105		RS1/16S683J
R 107		RS1/16S222J
R 151		RS1/16S222J
R 152		RS1/16S393J
R 154		RS1/16S104J
R 155		RS1/16S273J
R 156		RS1/16S243J
R 157		RS1/16S203J
R 160		RS1/16S222J
R 161		RS1/16S563J
R 162		RS1/16S105J
R 163		RS1/16S222J
R 202		RS1/16S223J
R 203		RS1/16S225J
R 204		RS1/16S103J
R 206		RS1/16S220J
R 207		RS1/16S101J
R 208		RS1/16S102J
R 209		RS1/16S471J
R 214		RS1/16S822J
R 215		RS1/16S822J
R 217		RS1/16S102J
R 231		RS1/16S272J
R 232		RS1/16S473J
R 237		RS1/16S103J
R 238		RS1/16S104J
R 239		RS1/16S104J
R 240		RS1/16S332J
R 241		RS1/16S202J
R 243		RS1/16S123J
R 244		RS1/16S103J

=====Circuit Symbol & No.===Part Name			Part No.
R	247		RS1/16S123J
CAPACITORS			
C	1		CCSQCH6R0D50
C	2		CCSRCK2R0C50
C	4		CCSRCH820J50
C	6		CCSRCH820J50
C	8		CKSRYB103K25
C	9		CKSQYB104K16
C	10		CCSRCKR50C50
C	11		CEJA1R0M50
C	13		CKSRYB222K50
C	14		CCSRCH220J50
C	16		CCSRCH8R0D50
C	17		CKSRYB222K50
C	18		CKSRYB103K25
C	19		CKSRYB222K50
C	20		CKSRYB222K50
C	21		CEJA100M16
C	22		CCSRTH9R0D50
C	23		CCSRTH120J50
C	24		CCSRCH471J50
C	25		CKSRYB103K25
C	31		CKSRYB103K25
C	32		CKSQYB472K50
C	33		CCSRCH5R0C50
C	34		CKSQYB104K16
C	36		CCSRRH201J50
C	51		CKSRYB223K25
C	52		CKSRYB103K25
C	54		CCSRCH470J50
C	55		CKSQYB223K25
C	56		CKSQYB104K16
C	57		CKSRYB472K50
C	58		CEJA330M10
C	59		CKSRYB103K25
C	61		CCSRCH270J50
C	62		CKSRYB103K25
C	63		CEJAR15M50
C	101		CEJANP100M10
C	102		CKSRYB182K50
C	103		CKSRYB682K25
C	104		CEJA2R2M50
C	105		CKSRYB103K25
C	106		CCSRCH151J50
C	107		CKSRYB103K25
C	151		CKSRYB472K50
C	152		CKSQYB104K16
C	153		CEJA3R3M50
C	154		CKSQYB104K16
C	157		CEJA3R3M50
C	158		CKSYB474K16
C	159		CEJA220M6R3
C	160		CKSQYB104K16
C	161		CKSQYB104K16
C	162		CEJA3R3M50
C	163		CKSRYB102K50
C	170		CCSRCH100D50
C	201		CCSRCH471J50
C	202		CCSRCH100D50
C	203		CKSRYB332K50
C	204		CKSQYB473K16
C	205		CKSQYB473K16
C	206		CKSQYB104K16
C	207		CCSRCH560J50
C	209		CKSQYB104K16
C	211		CCSRCH101J50
C	212		CEJA470M6R3

=====Circuit Symbol & No.===Part Name			Part No.
C	213		CKSRYB103K25
C	216		CCSRCH101J50
C	217		CEJA1R5M50
C	219		CCSRCH471J50
C	220		CKSRYB103K25
C	230		CKSRYB103K25
C	231		CCSRCH330J50
C	232		CCSRCH150J50
C	233		CKSQYB104K16
C	234		CEJA330M10
C	235		CKSRYB332K50
C	236		CKSQYB473K16
C	237		CCSRCH120J50
C	239		CKSRYB472K50
C	240		CEJAR47M50
C	241		CKSQYB104K16
C	242		CEJAR47M50
C	243		CEJAR33M50
C	244		CKSQYB473K16
C	245		CKSRYB123K25
C	246		CKSQYB473K16
C	250		CCSRCH471J50

D Unit Number :
Unit Name : Main PCB

MISCELLANEOUS

IC	101	IC	1245730345
IC	102	IC	IR3C14
IC	201	IC	1245730449
IC	202	IC	1245730308
IC	301	IC	1245730310
IC	302	IC	1245730313
IC	303	IC	1245730310
IC	305	IC	1245730086
IC	306	IC	1245730086
IC	401	IC	1245730445
IC	402	IC	1245730376
IC	403	IC	1245730309
IC	501	IC	1245730441
IC	601	IC	1245730184
IC	651	IC	1245730443
IC	801	IC	1245730444
IC	811	IC	1105730631
IC	861	IC	1245730311
Q	402		1245760006
Q	403		DTA114TE
Q	703	Transistor	2SA1037K
Q	704		DTC114EE
Q	705	Transistor	2SC4213
Q	706	Transistor	2SC4213
Q	801	Transistor	1245760001
Q	802	FET	2SK1830
Q	821	Transistor	2SA1244LB
Q	822	Transistor	2SC4081
Q	841	Transistor	2SA1244LB
Q	842	Transistor	2SC4081
D	701	Diode	1115700031
L	101	Inductor	1246140017
L	201	Inductor	1246140016
L	202	Inductor	1246140016
L	501	Inductor	1246140016
L	600	Inductor	1246120002
L	601	Inductor	1306140314
L	602	Inductor	1306140314
L	603	Inductor	1246120002
L	604	Inductor	1246120002

=====Circuit Symbol & No.===	Part Name	Part No.
L 605	Inductor	1306140314
L 606	Inductor	1306140314
L 607	Inductor	1306140314
L 608	Inductor	1306140314
L 612	Inductor	1246140014
L 651	Inductor	1246140014
L 801	Inductor	1246140014
L 802	Inductor	1306140314
L 842	Inductor	1246120002
J 801		RS1/8S0R0J
J 803		RS1/8S0R0J
XL 401	Ceramic Resonator	1245790006
B 701		RS1/16SS0R0J
XL 201	Crystal Resonator	1246160020
B 702		RS1/16SS0R0J
J 301		RS1/16SS0R0J
RESISTORS		
R 101		RS1/16SS823J
R 102		RS1/16SS563J
R 103		RS1/16SS104J
R 104		RS1/16SS104J
R 105		RS1/16SS104J
R 111		RS1/16SS223J
R 112		RS1/16SS223J
R 113		RS1/16SS223J
R 114		RS1/16SS223J
R 121		RS1/16SS0R0J
R 122		RS1/16SS0R0J
R 123		RS1/16SS0R0J
R 124		RS1/16SS0R0J
R 131		RS1/16SS1R0J
R 143		RS1/16SS0R0J
R 144		RS1/16SS0R0J
R 145		RS1/16SS0R0J
R 146		RS1/16SS0R0J
R 161		RS1/16SS122J
R 204		RS1/16SS102J
R 222		RS1/16SS105J
R 223		RS1/16SS0R0J
R 303		RS1/16SS103J
R 304		RS1/16SS332J
R 305		RS1/16SS473J
R 306		RS1/16SS681J
R 307		RS1/16SS681J
R 308		RS1/16SS681J
R 309		RS1/16SS681J
R 310		RS1/16SS681J
R 311		RS1/16SS102J
R 312		RS1/16SS102J
R 314		RS1/16SS0R0J
R 402		RS1/16SS0R0J
R 403		RS1/16SS223J
R 404		RS1/16SS223J
R 405		RS1/16SS0R0J
R 406		RS1/16SS223J
R 407		RS1/16SS223J
R 408		RS1/16SS223J
R 409		RS1/16SS223J
R 411		RS1/16SS104J
R 412		RS1/16SS103J
R 413		RS1/16SS102J
R 414		RS1/16SS102J
R 415		RS1/16SS102J
R 431		RS1/16SS104J
R 432		RS1/16SS104J
R 433		RS1/16SS104J
R 441		RS1/16SS102J

=====Circuit Symbol & No.===	Part Name	Part No.
R 442		RS1/16SS102J
R 443		RS1/16SS102J
R 444		RS1/16SS102J
R 445		RS1/16SS102J
R 446		RS1/16SS102J
R 448		RS1/16SS103J
R 510		RS1/16SS100J
R 511		RS1/16SS0R0J
R 512		RS1/16SS0R0J
R 513		RS1/16SS0R0J
R 514		RS1/16SS0R0J
R 601		RS1/16SS103J
R 709		RS1/16SS681J
R 710		RS1/16SS681J
R 713		RS1/16SS104J
R 714		RS1/16SS104J
R 717		RS1/16SS561J
R 718		RS1/16SS561J
R 719		RS1/16SS102J
R 720		RS1/16SS102J
R 721		RS1/16SS103J
R 722		RS1/16SS103J
R 723		RS1/16SS681J
R 801		RS1/16SS223J
R 802		RS1/16SS471J
R 803		1245810051
R 804		1305810059
R 805		1245810088
R 806		1245810090
R 807		RS1/16SS473J
R 808		1245810098
R 821		1245810091
R 822		RS1/16SS101J
R 823		1245810087
R 824		1245810050
R 826		RS1/16SS0R0J
R 828		1245810082
R 841		1245810091
R 842		RS1/16SS101J
R 843		1245810087
R 844		1245810050
R 848		1245810082
CAPACITORS		
C 101		CSZS100M10
C 102		CKSQYB105K16
C 103		CKSQYB105K16
C 104		CKSRYB273K16
C 106		CKSQYB224K16
C 107		CKSRYB123K25
C 109		CKSYB475K10
C 110		CKSQYB224K16
C 111		RS1/10S0R0J
C 112		CKSRYB332K50
C 113		CKSRYB333K16
C 114		CCSRCH331J50
C 121		CCSRCH271J50
C 122		CCSRCH271J50
C 123		CCSRCH391J50
C 124		CCSRCH391J50
C 131		CKSRYB123K25
C 132		CKSQYB105K16
C 140		CKSRYB104K16
C 166		CSZS100M10
C 201		1245950015
C 202		CSZS100M10
C 203		CKSRYB104K16
C 204		CKSRYB104K16
C 205		CKSQYB105K16

=====Circuit Symbol & No.	===Part Name	Part No.
C 211		CCSRCH100D50
C 212		CCSRCH100D50
C 301		CKSRYB104K16
C 302		CKSRYB104K16
C 303		CKSRYB104K16
C 305		CKSRYB104K16
C 306		CKSRYB104K16
C 307		CKSQYB224K16
C 401		CKSQYB105K16
C 402		CKSYB105K16
C 403		CKSQYB105K16
C 405		CKSRYB104K16
C 501		1245900059
C 502		CKSYB105K16
C 511		CSZS100M10
C 512		CKSQYB104K16
C 513		CSZS100M10
C 514		CKSQYB104K16
C 515		CSZS100M10
C 516		CKSQYB104K16
C 517		CKSRYB104K16
C 518		CKSRYB104K16
C 600		1245950015
C 601		CKSQYB105K16
C 602		CKSQYB105K16
C 603		CKSQYB105K16
C 604		CKSQYB105K16
C 605		CKSQYB105K16
C 606		CKSQYB105K16
C 607		CKSQYB105K16
C 608		CKSQYB105K16
C 611		CKSYB105K16
C 612		CKSRYB104K16
C 613		CKSYB225K16
C 651		CKSYB105K16
C 652		CKSRYB104K16
C 705		1245920014
C 706		1245920014
C 707		CCSRCH151J50
C 708		CCSRCH151J50
C 801		CKSYB105K16
C 802		CKSRYB104K16
C 803		CKSYB105K16
C 804		1245900058
C 805		CKSYB105K16
C 806		1245900059
C 807		CKSYB105K16
C 808		CKSQYB184K16
C 809		1245900058
C 810		CKSYB103K25
C 821		CCSRSL681J50
C 824		1245900003
C 825		1245900059
C 826		1245900059
C 827		CCSRCH151J50
C 840		CKSYB105K16
C 841		CKSRYB222K50
C 842		CCSRCH151J50
C 843		CKSQYB224K16
C 844		1245900059
C 846		1245900059
C 847		1245900059
C 861		CKSYB105K16
C 862		1245900058

A Unit Number : CWM6036
Unit Name : Tuner Amp Unit

MISCELLANEOUS

=====Circuit Symbol & No.	===Part Name	Part No.
IC 301	IC	PM2007A
IC 351	IC	PMW001B
IC 352	IC	TA75S393F
IC 401	IC	PML003AM
IC 501	IC	TDA7386
IC 552	IC	TPD1018F
IC 601	IC	PD4960A
IC 602	IC	S-80734ANDYI
IC 751	IC	CA0008AM
Q 201	Transistor	2SD2396
Q 202	Transistor	DTA114EK
Q 203	Transistor	DTC124EK
Q 251	Transistor	2SA1037K
Q 252	Transistor	DTC124EK
Q 253	Transistor	2SC2412K
Q 301	Transistor	2SC2412K
Q 302	Transistor	IMD2A
Q 351	Transistor	2SC2412K
Q 451	Transistor	IMH3A
Q 452	Transistor	IMH3A
Q 453	Transistor	DTA124EK
Q 455	Transistor	DTC124EK
Q 456	Transistor	2SC2412K
Q 457	Transistor	DTC124EK
Q 551	Transistor	2SC2412K
Q 552	Transistor	2SC2412K
Q 553	Transistor	2SC2412K
Q 554	Transistor	2SA1037K
Q 601	Transistor	DTC124EK
Q 602	Transistor	DTA114EK
Q 701	Transistor	2SD1757K
Q 702	Transistor	2SD1757K
Q 703	Transistor	DTC143TK
Q 704	Transistor	DTC143TK
Q 705	Transistor	2SC2412K
Q 706	Transistor	DTA114EK
Q 751	Transistor	2SA1037K
Q 752	Transistor	DTC114EK
Q 801	Transistor	2SA1037K
Q 802	Transistor	2SB1243
Q 803	Transistor	DTC143EK
Q 804	Transistor	2SA1037K
Q 805	Transistor	DTC114EK
Q 807	Transistor	DTC124EK
Q 951	Transistor	2SA1037K
Q 952	Transistor	DTC114EK
Q 953	Transistor	2SD2396
Q 954	Transistor	2SA1048
Q 955	Transistor	2SA1048
Q 956	Transistor	IMH1A
Q 957	Transistor	2SA1037K
Q 958	Transistor	DTC124EK
Q 959	Transistor	2SD1760F5
D 201	Diode	HZS7L(A3)
D 251	Diode	MA3150(M)
D 252	LED	BR4361F
D 301	Chip Diode	MA151K
D 302	Chip Diode	MA151K
D 451	Chip Diode	MA151WK
D 452	Diode	HZS9L(A2)

Circuit Symbol & No.	Part Name	Part No.
D 501	Diode	ERA15-02
D 502	Diode	ERA15-02
D 551	Diode	HZS7L(C2)
D 552	Diode	MA3062(M)
D 553	Diode	ERA15-02
D 554	Chip Diode	MA151WK
D 556	Diode	ERA15-02
D 558	Diode	ERA15-02
D 601	Diode	1SS270
D 801	Diode	MA153
D 802	Diode	MA153
D 803	Diode	MA153
D 804	Diode	MA3062(M)
D 951	Diode	HZS9L(B3)
D 952	Diode	ERA15-02
D 953	Diode	HZS6L(B2)
D 954	Diode	1SS270
L 201	Ferri-Inductor	LAU2R2K
L 301	Ferri-Inductor	LAU2R2K
L 303	Ferri-Inductor	LAU2R2K
L 304	Ferri-Inductor	LAU2R2K
L 351	Ferri-Inductor	LAU101K
L 501	Choke Coil 600mH	CTH1226
L 551	Ferri-Inductor	LAU2R2K
L 601	Ferri-Inductor	LAU2R2K
L 602	Ferri-Inductor	LAU2R2K
L 603	Ferri-Inductor	LAU2R2K
L 604	Ferri-Inductor	LAU2R2K
L 605	Inductor	LCTB2R2K2125
L 751	Ferri-Inductor	LAU2R2K
L 801	Ferri-Inductor	LAU2R2K
CF 601	Filter	CTF1071
X 301	Crystal Resonator 7.200MHz	CSS1379
X 351	Crystal Resonator 4.332MHz	CSS1056
X 601	Resonator 12.58291MHz	CSS1402
S 601	Switch(Reset)	CSG1046
VR 351	Semi-fixed 22kΩ(B)	CCP1321
	FM/AM Tuner Unit	CWE1416
BZ 601	Buzzer	CPV1011

RESISTORS

Circuit Symbol & No.	Part Name	Part No.
R 201		RS1/10S221J
R 202		RS1/10S221J
R 204		RS1/10S221J
R 206		RD1/4PU221J
R 207		RD1/4PU162J
R 251		RS1/10S103J
R 252		RS1/10S102J
R 253		RS1/10S223J
R 254		RS1/10S223J
R 255		RS1/10S103J
R 256		RS1/10S751J
R 257		RS1/10S473J
R 258		RS1/10S272J
R 259		RS1/10S223J
R 260		RS1/8S102J
R 261		RS1/10S221J
R 262		RS1/10S221J
R 301		RS1/10S272J
R 302		RS1/10S272J
R 305		RS1/10S0R0J
R 306		RS1/10S102J
R 307		RS1/10S0R0J
R 308		RS1/10S102J
R 309		RS1/10S222J
R 310		RS1/10S473J
R 311		RS1/10S0R0J
R 312		RS1/10S222J
R 313		RS1/10S472J
R 314		RS1/10S682J
R 315		RS1/10S682J
R 316		RS1/10S472J
R 317		RS1/10S561J
R 318		RS1/10S103J
R 319		RS1/10S222J
R 320		RS1/10S152J
R 321		RS1/10S392J
R 322		RS1/10S392J
R 323		RS1/10S272J
R 324		RS1/10S103J
R 325		RS1/10S393J
R 326		RS1/10S222J
R 327		RS1/10S681J
R 328		RA4C681J
R 329		RS1/10S473J
R 330		RS1/10S222J
R 331		RS1/10S562J
R 332		RS1/10S0R0J
R 333		RS1/10S102J
R 334		RS1/10S222J
R 335		RS1/10S473J
R 336		RS1/10S562J
R 337		RS1/10S105J
R 338		RS1/10S222J
R 339		RS1/10S102J
R 340		RS1/10S102J
R 341		RS1/10S0R0J
R 351		RS1/10S333J
R 352		RA4C102J
R 356		RS1/10S102J
R 357		RS1/10S102J
R 358		RS1/10S102J
R 359		RS1/10S222J
R 360		RS1/10S222J
R 361		RS1/10S562J
R 362		RS1/10S473J
R 363		RS1/10S473J
R 364		RS1/10S684J
R 365		RS1/10S681J
R 366		RS1/10S562J
R 368		RS1/10S103J
R 401		RD1/4PU751J
R 402		RD1/4PU751J
R 405		RD1/4PU181J
R 406		RD1/4PU181J
R 407		RD1/4PU223J
R 408		RD1/4PU223J
R 409		RD1/4PU102J
R 410		RD1/4PU102J
R 411		RS1/10S102J
R 412		RS1/10S102J
R 413		RS1/10S102J
R 451		RD1/4PU821J
R 452		RD1/4PU821J
R 453		RD1/4PU821J
R 454		RD1/4PU821J
R 455		RS1/10S223J
R 456		RS1/10S223J
R 457		RS1/10S223J
R 458		RS1/10S223J
R 460		RD1/4PU182J

=====Circuit Symbol & No.===Part Name			Part No.
R	461		RS1/10S103J
R	462		RS1/10S223J
R	463		RS1/10S103J
R	464		RS1/10S103J
R	501		RS1/10S221J
R	502		RS1/10S101J
R	503		RS1/10S153J
R	504		RS1/10S103J
R	551		RS1/10S223J
R	552		RS1/10S473J
R	553		RS1/10S223J
R	554		RS1/10S473J
R	555		RS1/10S472J
R	556		RS1/10S103J
R	557		RS1/10S103J
R	558		RS1/10S473J
R	559		RD1/4PU153J
R	560		RS1/10S472J
R	561		RS1/10S472J
R	562		RS1/10S102J
R	563		RS1/10S473J
R	564		RS1/10S473J
R	565		RS1/10S103J
R	567		RD1/4PU102J
R	568		RD1/4PU102J
R	569		RS1/10S473J
R	570		RS1/10S473J
R	571		RS1/10S0R0J
R	572		RS1/10S0R0J
R	573		RS1/10S0R0J
R	574		RS1/10S0R0J
R	601		RS1/10S152J
R	602		RS1/10S152J
R	603		RS1/10S822J
R	604		RS1/10S471J
R	606		RS1/10S0R0J
R	608		RS1/10S473J
R	609		RS1/10S102J
R	610		RS1/10S473J
R	611		RS1/10S473J
R	612		RS1/10S0R0J
R	613		RS1/10S102J
R	614		RS1/10S102J
R	615		RS1/10S102J
R	617		RS1/10S102J
R	618		RS1/10S222J
R	619		RS1/10S473J
R	620		RS1/10S473J
R	621		RS1/10S473J
R	622		RS1/10S473J
R	623		RS1/10S221J
R	624		RS1/10S102J
R	625		RA4C221J
R	626		RS1/10S473J
R	627		RS1/10S473J
R	629		RS1/10S0R0J
R	701		RS1/10S224J
R	702		RS1/10S224J
R	703		RS1/10S222J
R	704		RS1/10S222J
R	705		RS1/10S223J
R	706		RS1/10S223J
R	707		RS1/10S224J
R	751		RS1/10S102J
R	752		RS1/10S102J

=====Circuit Symbol & No.===Part Name			Part No.
R	753		RS1/10S473J
R	754		RS1/10S473J
R	755		RS1/10S101J
R	756		RS1/10S101J
R	757		RS1/10S620J
R	758		RS1/10S223J
R	759		RS1/10S102J
R	760		RS1/10S102J
R	761		RS1/10S222J
R	762		RS1/10S472J
R	801		RS1/10S223J
R	802		RS1/10S332J
R	803		RS1/10S0R0J
R	804		RS1/10S222J
R	805		RS1/10S222J
R	806		RS1/10S222J
R	807		RS1/10S222J
R	808		RS1/10S222J
R	809		RS1/10S222J
R	810		RS1/10S222J
R	811		RS1/4S182J
R	813		RS1/10S473J
R	814		RS1/4S512J
R	816		RS1/10S1R0J
R	819		RS2PMF330J
R	820		RS2PMF180J
R	951		RS1/10S473J
R	952		RS1/10S472J
R	953		RD1/4PU102J
R	954		RS1/10S103J
R	955		RS1/10S362J
R	956		RS1/10S103J
R	957		RS1/10S362J
R	958		RS1/10S101J
R	959		RS1/10S104J
R	960		RS1/8S222J
R	961		RS1/10S104J
R	962		RS1/10S103J
R	963		RS1/10S103J
R	964		RS1/10S0R0J
R	966		RS1/10S0R0J
CAPACITORS			
C	203		CEJA101M10
C	204		CKSQYB473K25
C	205		CKSQYB103K50
C	251		CKSQYB104K50
C	252		CKSQYB103K50
C	301		CKSQYB223K50
C	302		CKSQYB223K50
C	303		CKSYB105K16
C	304		CKSYB105K16
C	307		CKSQYB223K50
C	308		CKSQYB103K50
C	309		CKSQYB273K50
C	310		CKSQYB103K50
C	311		CKLSR473K16
C	312		CKSQYB223K50
C	314		CKSQYB223K50
C	319		CKSQYB103K50
C	320		CEJA220M10
C	321		CKSQYB103K50
C	322		CKSQYB471K50
C	323		CKSQYB103K50
C	325		CKSQYB103K50
C	326		CKSQYB103K50
C	327		CCSQCH101J50
C	328		CCSQCH101J50

=====Circuit Symbol & No.		===Part Name	Part No.
C	329		CEJA220M6R3
C	330		CKSQYB473K25
C	332		CKSQYB103K50
C	335		CEJA220M10
C	336		CKSQYB103K50
C	337	4.7µF/16V	CCH1250
C	339		CKSQYB103K50
C	340		CKSQYB103K50
C	341	4.7µF/16V	CCH1250
C	342		CCSQCH150J50
C	343		CCSQCH150J50
C	345		CEJAR47M50
C	346		CKSQYB103K50
C	347		CEJA100M16
C	351		CEJA100M16
C	352		CCSQCH101J50
C	353		CKSQYB222K50
C	354		CKSQYB104K50
C	355		CKSYB105K16
C	356		CKSQYB104K50
C	357		CKSQYB472K50
C	358		CEJA4R7M35
C	359		CKSQYB104K50
C	360		CCSQCH220J50
C	361		CCSQCH220J50
C	362		CKSQYB103K50
C	363		CKSQYB104K50
C	364		CKSQYB223K50
C	403		CKSQYB105K10
C	404		CKSQYB105K10
C	405		CKSQYB105K10
C	406		CKSQYB105K10
C	407		CKSQYB105K10
C	408		CKSQYB105K10
C	409		CKSQYB224K16
C	410		CKSQYB224K16
C	411		CKSQYB105K10
C	412		CKSQYB105K10
C	413		CKSQYB153K50
C	414		CKSQYB153K50
C	415		CKSQYB104K50
C	416		CEJA470M10
C	417		CEJA100M16
C	451		CEJA2R2M50
C	452		CEJA2R2M50
C	453		CEJA2R2M50
C	454		CEJA2R2M50
C	455		CCSQCH101J50
C	456		CCSQCH101J50
C	457		CCSQCH101J50
C	458		CCSQCH101J50
C	501	4700µF/16V	CCH1187
C	502		CKSQYB104K50
C	503		CKSYB224K16
C	504		CKSYB224K16
C	505		CKSYB224K16
C	506		CKSYB224K16
C	507		CEJA330M10
C	508		CEJA1R0M50
C	509		CKSQYB105K10
C	510		CEJA100M16
C	551		CKSYB105K16
C	556		CKSQYB473K25
C	558		CKSQYB473K25
C	602		CEJA2R2M50

=====Circuit Symbol & No.		===Part Name	Part No.
C	603		CCSQCH200J50
C	604		CCSQCH200J50
C	605		CKSQYB104K50
C	606		CCSQCH101J50
C	607		CCSQCH101J50
C	612		CCSQCH101J50
C	701		CKSQYB223K50
C	751		CKSQYB102K50
C	752		CKSQYB102K50
C	753		CKSQYB104K50
C	803		CCSQCH101J50
C	804		CKSQYB104K50
C	805		CCSQCH101J50
C	951		CEJA101M10
C	952		CKSQYB103K50
C	953		CKSQYB473K25
C	954		CEJA101M10
C	955	1500µF/16V	CCH1201
C	956		CEJA100M16
C	957		CKSQYB103K50
C	958		CEJA470M10

C

Unit Number : CWM6041
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	901	IC	PD6277A
IC	902	IC	LC75874W
IC	903	IC	RS-140
Q	901	Transistor	IMH10A
Q	903	Transistor	IMH10A
Q	904	Transistor	IMH10A
Q	905	Transistor	IMH10A
Q	906	Transistor	DTC143TK
Q	907	Transistor	2SC2412K
D	901	Diode	MA153
D	902	Diode	MA153
D	903	LED	NSPWF50SB
D	904	LED	NSPWF50SB
D	907	LED	NSPWF50SB
D	908	LED	NSPWF50SB
D	909	LED	CL170DCD
D	910	LED	CL170DCD
D	911	LED	CL170PGCD
D	912	LED	CL170PGCD
D	913	LED	CL170DCD
D	914	LED	CL170PGCD
D	915	LED	CL170SBX
L	901	Inductor	LCTB4R7K3216
X	901	Resonator 5.00MHz	CSS1423
S	901	Switch	CSG1115
S	902	Switch	CSG1113
S	903	Switch	CSG1113
S	904	Switch	CSG1113
S	905	Switch	CSG1113
S	906	Switch	CSG1113
S	907	Switch	CSG1113
S	908	Switch	CSG1043
S	909	Switch	CSG1043
S	910	Switch	CSG1113
S	911	Switch	CSG1113
S	912	Switch	CSG1113
S	913	Switch	CSG1113
S	914	Switch	CSG1113
S	915	Switch	CSG1113
S	916	Switch	CSG1113

=====Circuit Symbol & No.	===Part Name	Part No.
S 917	Switch	CSG1113
S 918	Switch	CSG1113
S 919	Switch	CSG1113
S 920	Switch	CSG1113
S 921	Switch	CSG1113
S 922	Switch	CSG1113
S 923	Switch	CSG1113
LCD 901	LCD	CAW1490
RESISTORS		
R 901		RS1/10S222J
R 902		RS1/10S222J
R 903		RS1/10S103J
R 904		RS1/10S121J
R 905		RS1/10S2R2J
R 907		RA4C102J
R 908		RS1/16S102J
R 909		RS1/16S102J
R 910		RA4C102J
R 911		RA4C102J
R 912		RA4C103J
R 913		RS1/8S751J
R 915		RS1/8S751J
R 916		RS1/16S472J
R 917		RS1/16S472J
R 918		RS1/16S472J
R 919		RS1/16S473J
R 920		RA4C102J
R 921		RS1/16S472J
R 922		RS1/16S472J
R 923		RS1/16S472J
R 924		RS1/10S472J
R 925		RS1/8S751J
R 926		RS1/8S751J
R 928		RS1/8S751J
R 929		RS1/8S181J
R 930		RS1/8S181J
R 931		RS1/8S121J
R 932		RS1/8S121J
R 933		RS1/8S121J
R 934		RS1/8S121J
R 935		RS1/8S121J
R 936		RS1/8S121J
R 937		RS1/8S121J
R 938		RS1/8S121J
R 939		RS1/8S121J
R 940		RS1/8S121J
R 941		RS1/8S181J
R 942		RS1/8S181J
R 943		RS1/8S121J
R 944		RS1/8S121J
R 949		RS1/8S242J
R 950		RS1/10S103J
R 1001		RS1/8S242J
R 1002		RS1/8S242J
R 1003		RS1/8S242J
R 1004		RS1/8S561J
R 1005		RS1/8S561J
R 1007		RS1/10S0R0J
R 1009		RS1/8S561J
R 1010		RS1/8S181J
R 1011		RS1/8S181J
R 1012		RS1/8S751J

=====Circuit Symbol & No.	===Part Name	Part No.
CAPACITORS		
C 902		CSZSR100M6R3
C 903		CSZSR100M6R3
C 904		CKSQYB473K16
C 905		CKSQYB104K16
C 906		CKSQYB681K50
C 907		CKSQYB104K16
C 908		CKSQYB104K16
C 909		CKSQYB104K16
C 910		CKSQYB104K16
C 911		CKSQYB104K16
C 913		CKSQYB104K16
C 914		CKSQYB104K16
C 917		CKSQYB104K16
C 918		CKSQYB104K16
C 919		CKSQYB104K16

E Unit Number :
Unit Name : Mechanism PCB

SW 901	Switch	CSN1033
SW 902	Switch	1245300030
SW 903	Switch	1245300030
R 901		RS1/16SS104J
R 902		RS1/16SS333J
R 903		RS1/16SS104J
C 901		CKSYB105K16
C 902		CKSYB105K16

F Unit Number :
Unit Name : Switch PCB

SW 651	Switch	1305301313
SW 652	Switch	1305301313
SW 653	Switch	1305301313
C 653		CKSRYB104K16

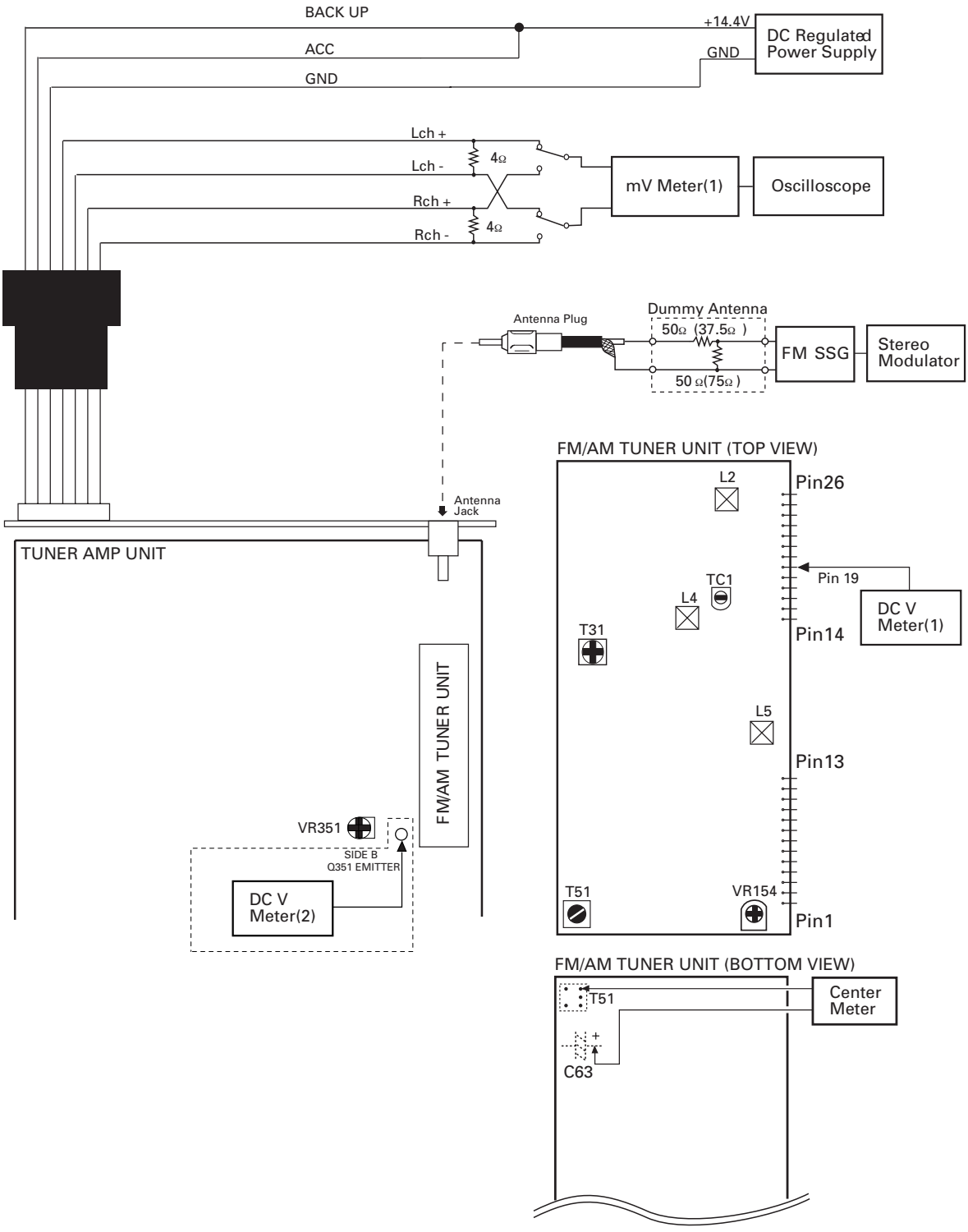
Miscellaneous Parts List

Optical Pickup Assy	1246170023
Sled Motor Assy	1246300014
Loading Motor Assy	1246300043
Spin Motor Assy	1246300060

6. ADJUSTMENT

6.1 TUNER ADJUSTMENT

● Connection Diagram



Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.)
S1:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)
S2:STEREO MOD., 400Hz, L or R=60%(40.5kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

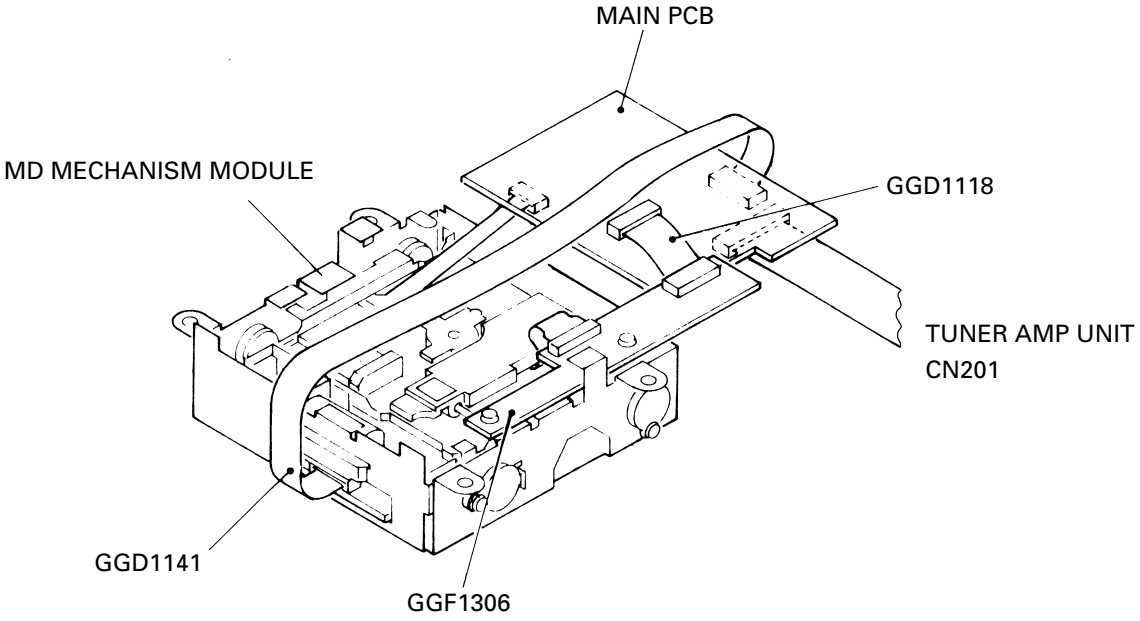
FM ADJUSTMENT

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	•••••	•••••	108.0	L5	DC V Meter(1) : 6V
IF	2	98.1 M	60—100	98.1	T51	Center Meter : 0
ANT Coil	3	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	4	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
RF Trimmer	5	129.3 M	60—80	107.9	TC1	mV Meter(1) : Minimum
	6	RF Coil and RF Trimmer shall be adjusted twice or more				
IFT	7	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	8	98.1 S1	40	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

RDS SL ADJUSTMENT

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
	1	104.0 S2	35	104.0	VR351	DC V Meter(2) : 1.75V+0.05V -0.35V

6.2 MD MECHANISM MODULE ADJUSTMENT



● **About test disc**

Use a low reflection disc (MMD-211) for preliminary auto tuning (AUTO1).
Use a high reflection disc (MMD-110), low reflection disc (MMD-211) for ATT auto tuning (AUTO2).

Disc No. : TEAC MMD-211B or MMD-212B
Tool No. : GGF1328

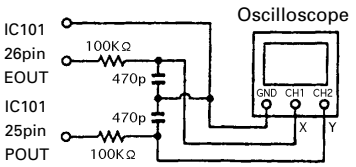
1. Be sure to perform "preliminary auto tuning" when you exchanged a PCB, Mechanism Unit, or Pickup Unit.

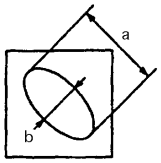
2. Let TP421 and TP435 (IC402: pin6, pin8) short circuited before preliminary auto tuning or overwriting EE-PROM (IC402) to clear protection on EE-PROM.
   * To overwrite EE-PROM, please see page 9 of the CX-893 Service Manual.

● How to tune optical pick up grating

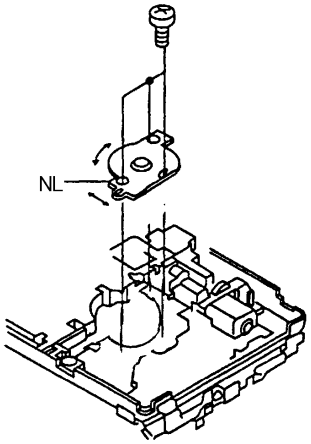
Adjust Lissajous' figure (x-y) of EOUT (TP131) to FOUT (TP130) after automatically adjusting in a test mode AUTO2 using a high reflection disc.

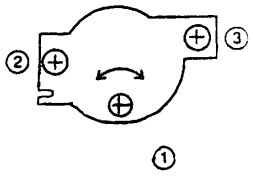
1. Loosen the three screws of the spinning motor and adjust checking Lissajous' figure.
2. After the tuning is completed, tighten the screws ①, ②, and ③, in that order.
3. Check Lissajous' figure again.





Lissajous' figure
Within the range a:b = 3:1

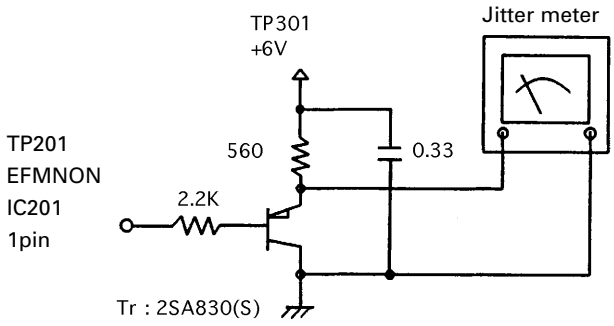




Check Lissajous' figure while shifting positions to which the spinning motor is mounted.

● About tuning of jitter and how to tune it

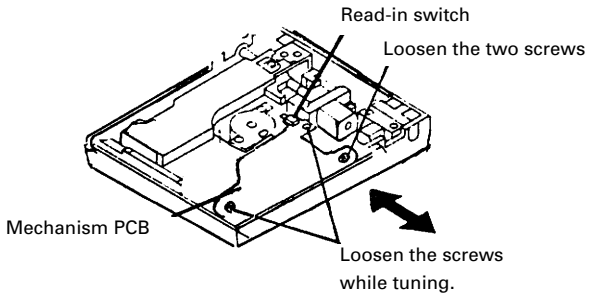
Use the following circuit as a tool to measure jitter.



Check jitter value of EFM with the step continuous play in TESTPLAY mode after automatically tuning in a test mode AUTO2 (ATT auto tuning) using a low reflection disc.

● How to tune the position of read-in switch

Check the sub code cluster value of the position of read-in switch in INNER mode. If the SUBQ value is outside the range between FF85 and FFD2, tighten the screws by shifting the mechanism PCB to the directions indicated with the arrow in the figure below, and then check the sub code cluster value of the position of read-in switch again.



● Specifications of test mode operation

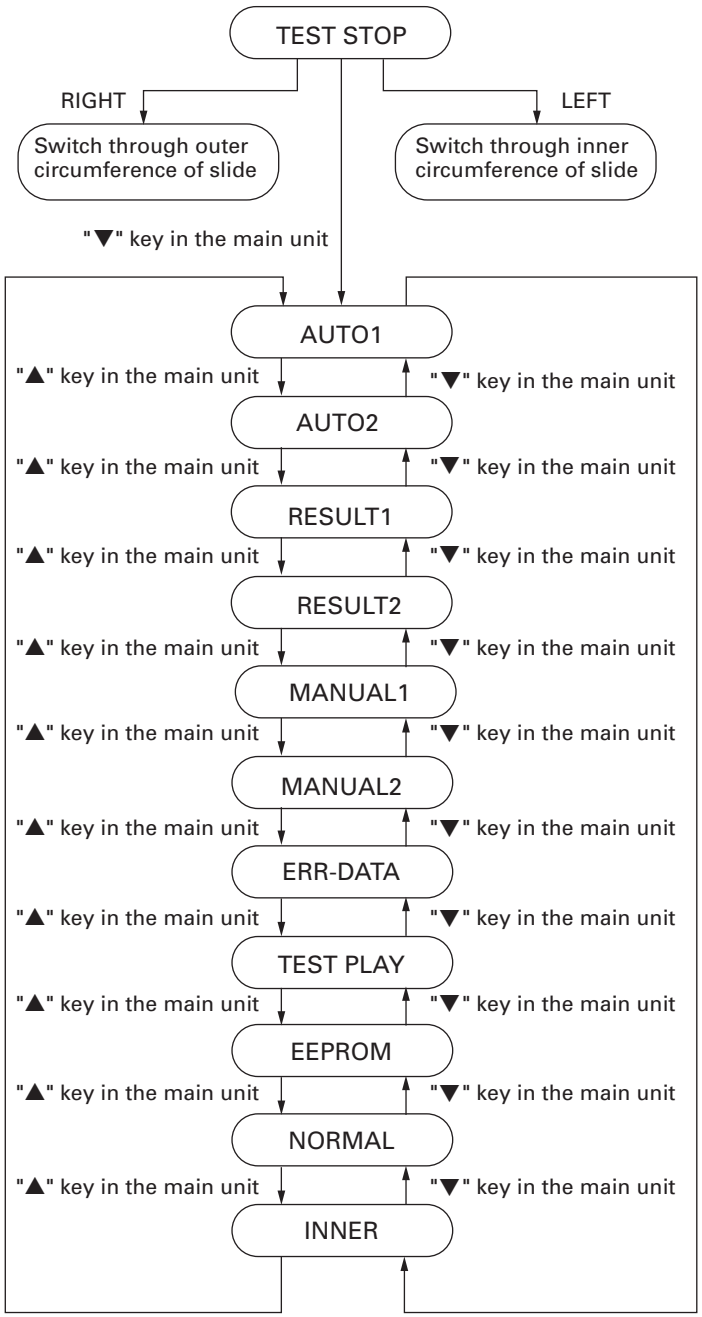
Test mode is used to tune the MD player part in this model.

- How to switch to test mode.
  Turn ACC and Back Up ON while holding down 4 key and 6 key.
- How to deselect test mode.
  Turn ACC and Back Up OFF.

Key name	Outline of key operations
BAND	Used to power ON/OFF.
►	Move through threads, jump, change settings, etc.
◄	Move through threads, jump, change settings, etc.
▲	Switch through MENU in the forward direction.
▼	Switch through MENU in the backward direction.
SCR	Switch to TEST STOP mode.
FUNCTION	Confirm the item you selected from MENU.

6.2 MENU SWITCHING IN TEST MODE

● Menus in Test Mode



: STOP test mode

: Preliminary auto tuning menu

: ATT auto tuning checking menu

: Preliminary auto tuning checing menu

: ATT auto tuning checking menu

: Preliminary manual tuning menu

: ATT manual tuning menu

: Error history displaying menu

: Continuous playing menu

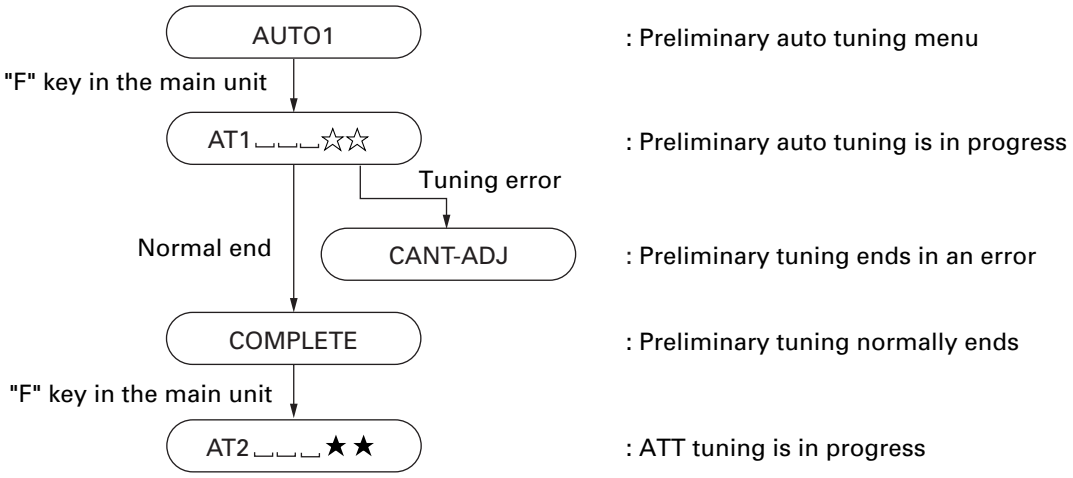
: EEPROM setting menu

: Test mode normal playing menu

: INNER switch position measuring menu

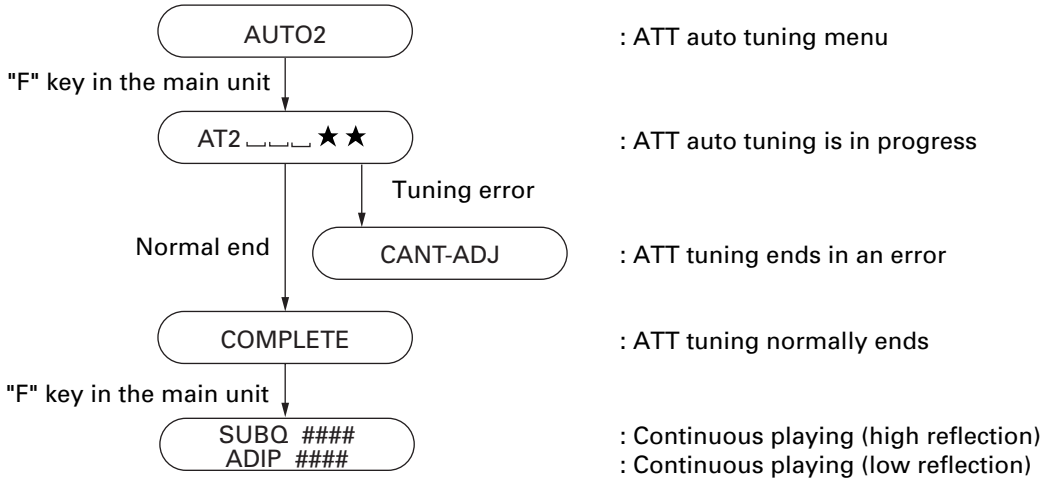
* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .

● Preliminary auto tuning



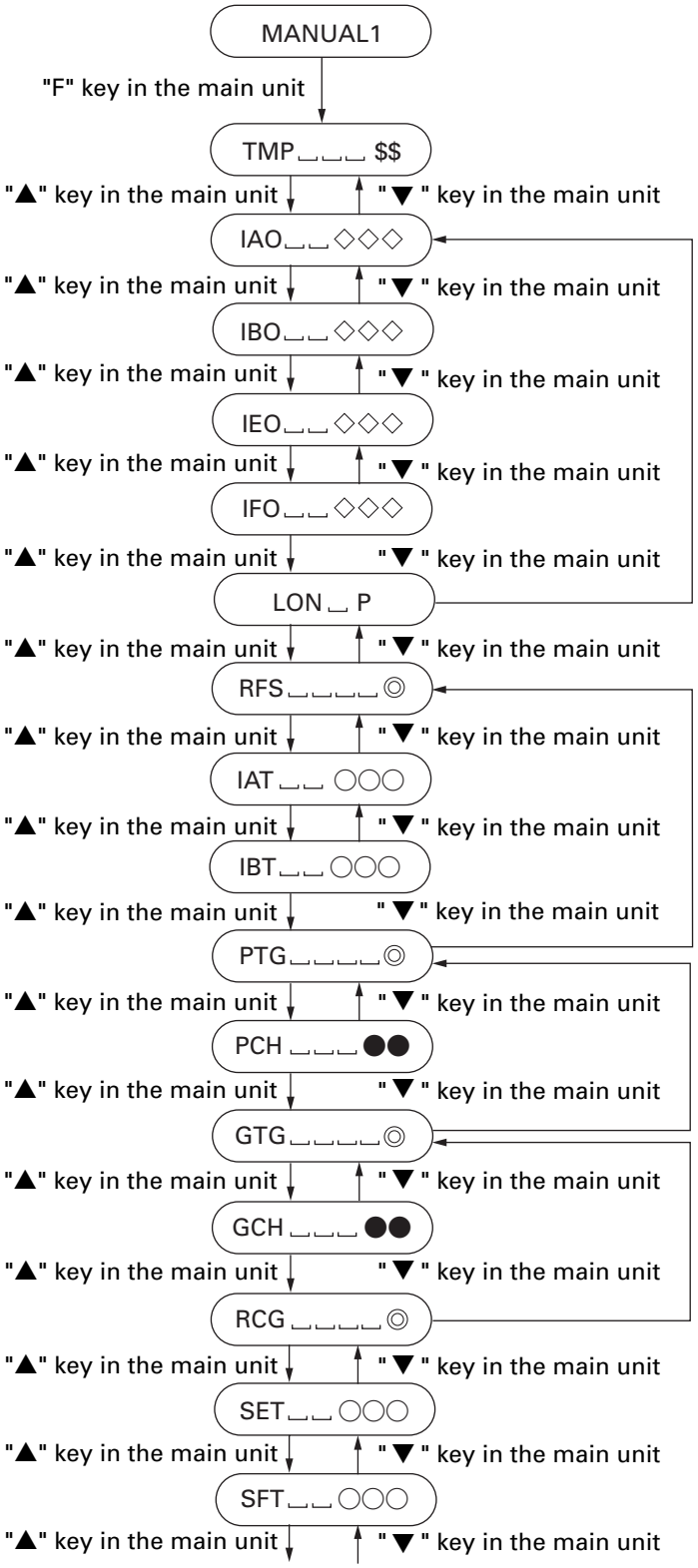
* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .
* "☆☆" is one of the following tuning numbers:
  - 00 : Switch through most inner circumference
  - 02 : Tentative measurement of ABEF offset
  - 04 : Rough tuning of RF side focus gain
  - 05 : Tentative setting of focus ATT
  - 06 : Tuning of tracking gain in RF side pit part
  - 07 : COUT level setting for tuning pit part
  - 08 : Switch through outer circumference
  - 09 : Tuning of tracking gain in RF side groove part
  - 10 : COUT level setting for tuning groove part
  - 11 : Tuning of RF side TCRS gain
  - 12 : Initial setting of tracking ATT
  - 13 : Fine tuning of RF side focus gain
  - 14 : Initial setting of focus ATT
  - 15 : Measurement of S gain "High" ABEF offset
  - 16 : Measurement of TCRS offset
  - 17 : Measurement of S gain "Low" ABEF offset

● **ATT auto tuning**



* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .
* " ★★ " is one of the following tuning numbers:
  - 00 : Switch through most inner circumference
  - 03 : ATT setting of tracking in pit part
  - 04 : ATT setting of focus in pit part
  - 06 : Switch through outer circumference (low reflection only)
  - 07 : ATT setting of TCRS (low reflection only)
  - 08 : ATT setting of tracking in groove part (low reflection only)
  - 09 : ATT setting of focus in groove part (low reflection only)

● Preliminary manual tuning



: Preliminary manual tuning menu

: Temperature code display
$$: Temperature code

: Tentative setting of A signal offset (AINO)
◇◇◇ : Measured value

: Tentative setting of B signal offset (BINO)
◇◇◇ : Measured value

: Tentative setting of E signal offset (EINO)
◇◇◇ : Measured value

: Tentative setting of F signal offset (FINO)
◇◇◇ : Measured value

: Laser power on (Play power on)

: Rough tuning of RF side focus gain
◎ : Setting value of gain

: A-ATT (Focus) tentative setting
○○○ : ATT setting value

: B-ATT (Focus) tentative setting
○○○ : ATT setting value

: Tuning of tracking gain in RF side pit part
◎ : Setting value of gain

: COUT level setting for tuning pit part
●● : Setting value of COUT level

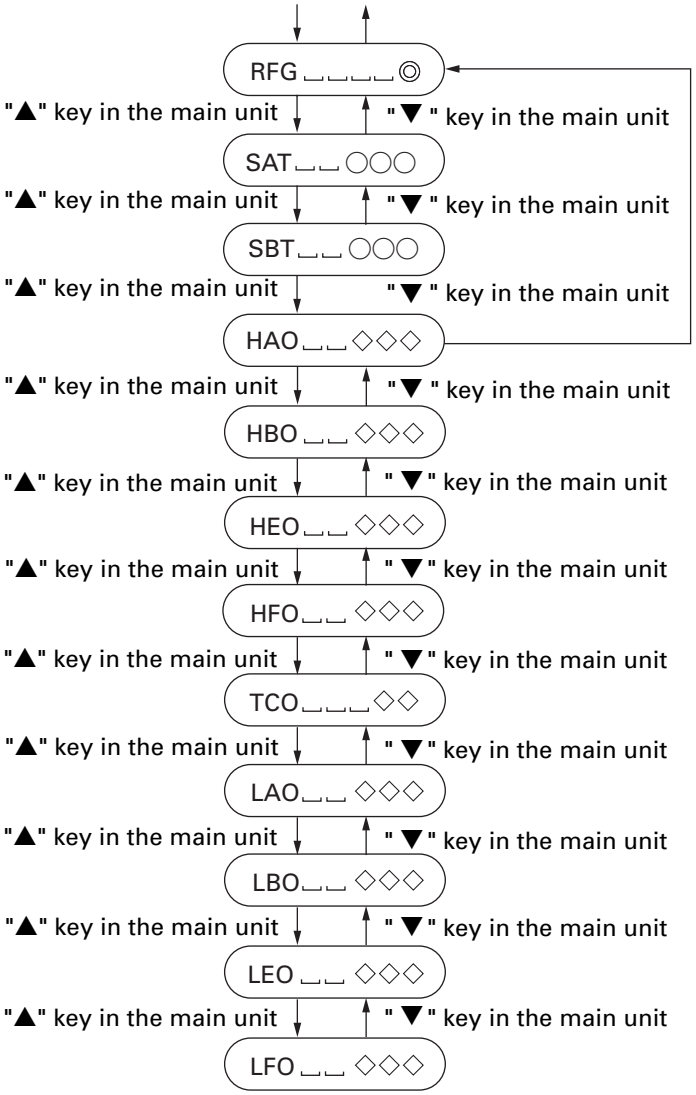
: Tuning of tracking gain in RF side grove part
◎ : Setting value of gain

: COUT level setting for tuning grove part
●● : Setting value of COUT level

: Tuning of RF side TCRS gain
◎ : Setting value of gain

: E-ATT (Tracking) initial setting
○○○ : ATT setting value

: F-ATT (Tracking) initial setting
○○○ : ATT setting value



: Fine tuning of RF side focus gain
◎: Setting value of gain

: A-ATT (Focus) initial setting
○○○ : ATT setting value

: B-ATT (Focus) initial setting
○○○ : ATT setting value

: Measurement of S gain "High" A signal offset (AINO)
◇◇◇ : Measured value

: Measurement of S gain "High" B signal offset (BINO)
◇◇◇: Measured value

: Measurement of S gain "High" E signal offset (EINO)
◇◇◇ : Measured value

: Measurement of S gain "High" F signal offset (FINO)
◇◇◇ : Measured value

: Measurement of TCRS signal offset (TCRSO)
◇◇: Measured value

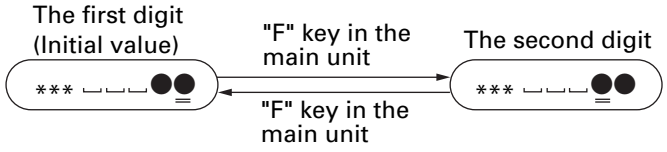
: Measurement of S gain "Low" A signal offset (AINO)
◇◇◇ : Measured value

: Measurement of S gain "Low" B signal offset (BINO)
◇◇◇ : Measured value

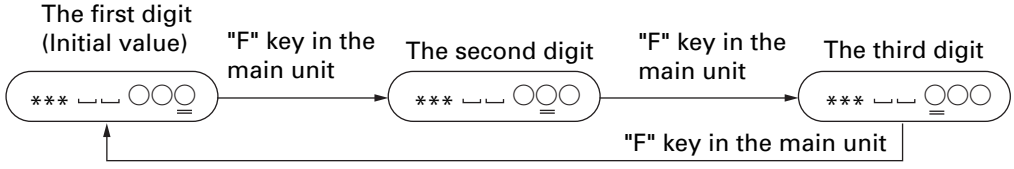
: Measurement of S gain "Low" E signal offset (EINO)
◇◇◇ : Measured value

: Measurement of S gain "Low" F signal offset (FINO)
◇◇◇ : Measured value

* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .
* Pressing "F" key in the main unit in each status where a setting value is displayed changes the digit of the setting value that will be changed.
• When the setting value has two digits.

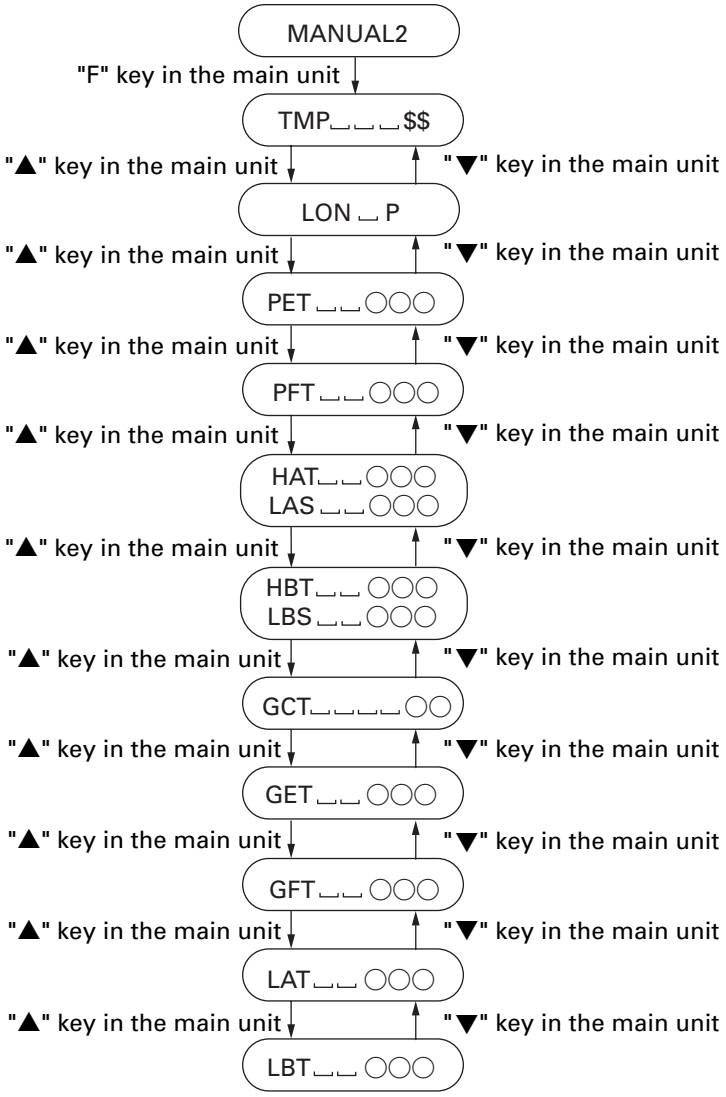


• When the setting value has three digits.



* Pressing VOL UP/DOWN key in each status where a setting value is displayed changes the value in the digit you selected in the range from 0H through FH. However, the setting value of RF side gain changes in the range from 0H through 6H.

● ATT manual tuning



: ATT manual tuning menu

: Temperature code display
$$: Temperature code

: Laser power on (Play power on)

: E-ATT (Tracking) setting of pit part
○○○ : ATT setting value

: F-ATT (Tracking) setting of pit part
○○○ : ATT setting value

: Setting of high reflection A-ATT (Focus)
: Setting of low reflection A-ATT (Focus)
○○○ : ATT setting value

: Setting of high reflection B-ATT (Focus)
: Setting of low reflection B-ATT (Focus)
○○○ : ATT setting value

: ATT setting of TCRS
○○ : ATT setting value

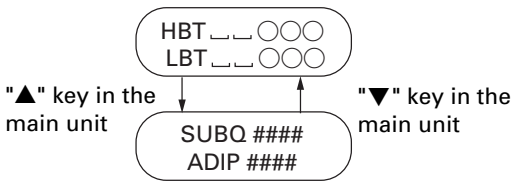
: Setting of E-ATT (Tracking) in groove part
○○○ : ATT setting value

: Setting of F-ATT (Tracking) in groove part
○○○ : ATT setting value

: Setting of low reflection A-ATT (Focus)
○○○ : ATT setting value

: Setting of low reflection B-ATT (Focus)
○○○ : ATT setting value

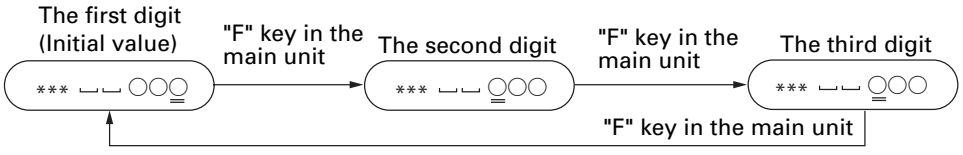
* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" status.
* Pressing "F" key in the main unit in the B-ATT setting status switches to continuous play.
Pressing "F" key in the main unit in the continuous playing status switches to the B-ATT setting status in the ATT manual tuning.



: Setting of high reflection B-ATT (Focus) in pit part
: Setting of low reflection B-ATT (Focus) in pit part
: Setting of low reflection B-ATT (Focus) in groove part
○○○ : ATT setting value

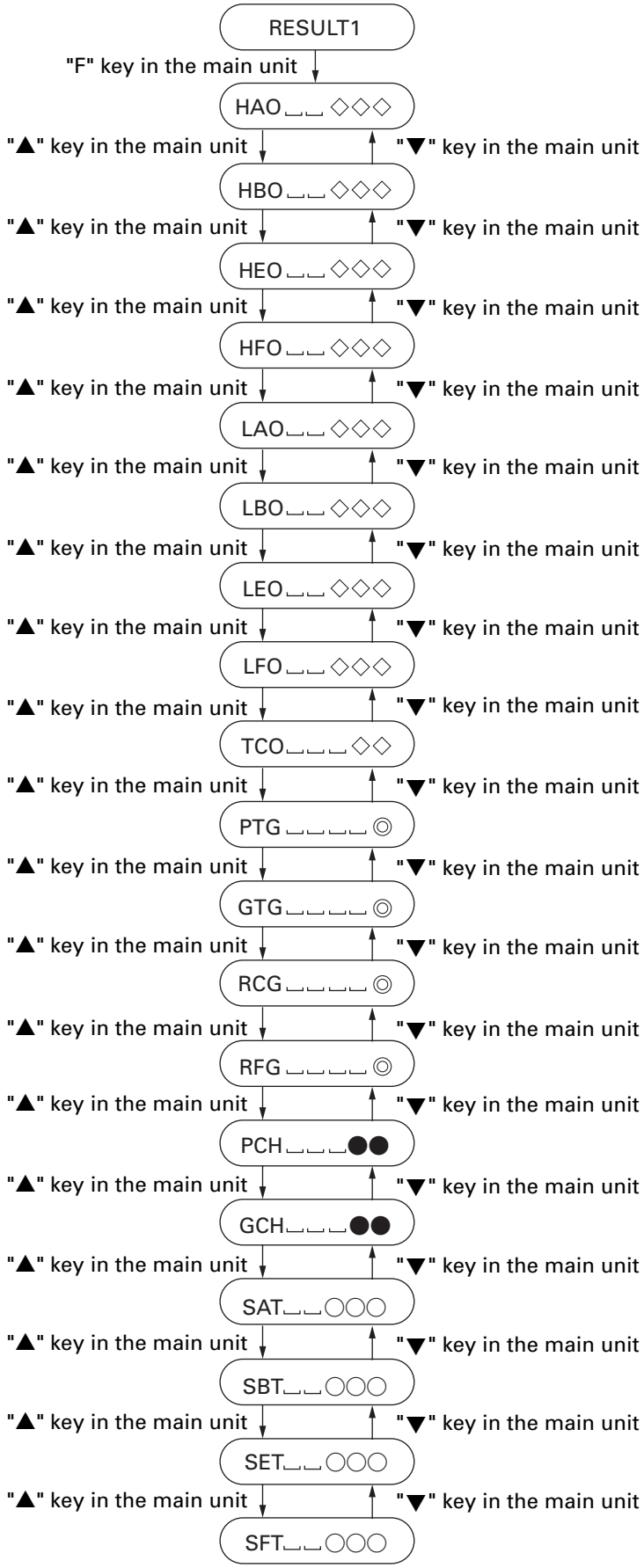
: Continuous play (pit part)
: Address

* Pressing "F" key in the main unit in each status where a setting value is displayed changes the digit of the setting value that will be changed.



* Pressing RIGHT/LEFT key in each status where a setting value is displayed changes the value in the digit you selected in the range from 0_H through F_H.

● Checking preliminary tuned value



: Preliminary tuning checking menu

: Measured value of S gain "High" A signal offset (Setting value)

: Measured value of S gain "High" B signal offset (Setting value)

: Measured value of S gain "High" E signal offset (Setting value)

: Measured value of S gain "High" F signal offset (Setting value)

: Measured value of S gain "Low" A signal offset (Setting value)

: Measured value of S gain "Low" B signal offset (Setting value)

: Measured value of S gain "Low" E signal offset (Setting value)

: Measured value of S gain "Low" F signal offset (Setting value)

: Measured value of TCRS signal offset

: Measured value of tracking gain in RF side pit part

: Measured value of tracking gain in RF side groove part

: Measured value of RF side TCRS gain

: Measured value of RF side focus gain

: Setting value of COUT level for tuning pit part

: Setting value of COUT level for tuning groove part

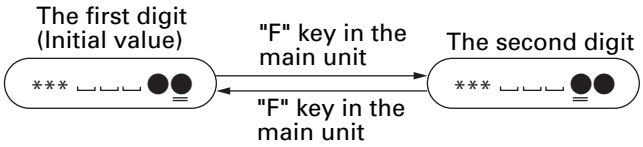
: Initial value of A-ATT (Focus)

: Initial value of B-ATT (Focus)

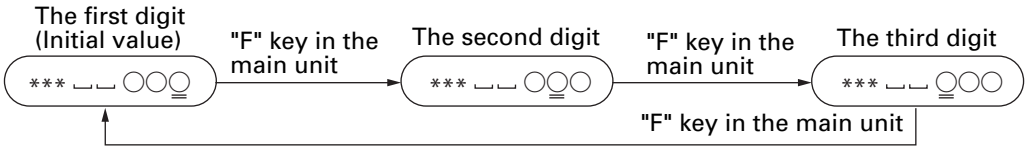
: Initial value of E-ATT (Tracking)

: Initial value of F-ATT (Tracking)

* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .
* Pressing "F" key in the main unit in each status where a setting value is displayed changes the digit of the setting value that will be changed.
  • When the setting value has two digits.

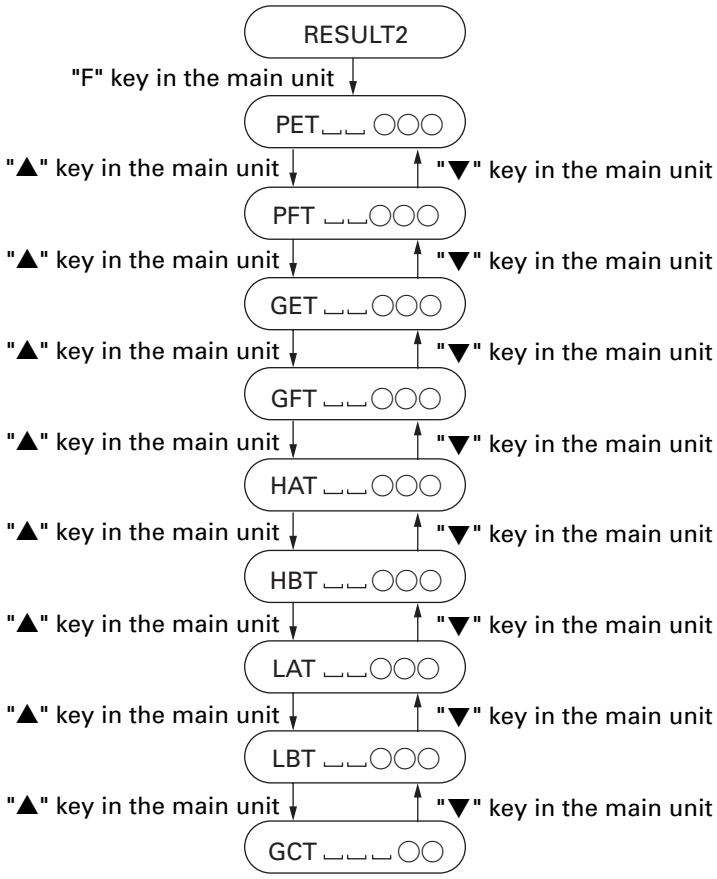


  • When the setting value has three digits.



* Pressing VOL UP/DOWN key in each status where a setting value is displayed changes the value in the digit you selected in the range from 0_H through F_H. However, the setting value of RF side gain changes in the range from 0_H through 6_H.

● Checking ATT setting value



: ATT value checking menu

: Setting value of E-ATT (Tracking) in pit part

: Setting value of F-ATT (Tracking) in pit part

: Setting value of E-ATT (Tracking) in grove part

: Setting value of F-ATT (Tracking) in grove part

: Setting value of high reflection A-ATT (Focus)

: Setting value of high reflection B-ATT (Focus)

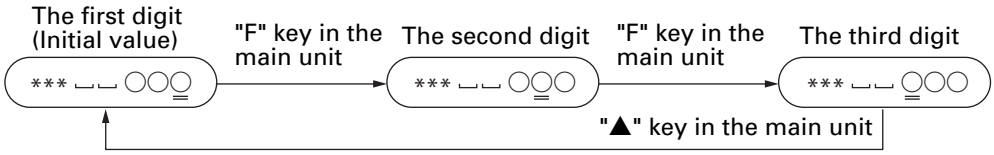
: Setting value of low reflection A-ATT (Focus)

: Setting value of low reflection B-ATT (Focus)

: Setting value of TCRS-ATT

* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .
* Pressing "F" key in the main unit in each status where a setting value is displayed changes the digit of the setting value that will be changed.

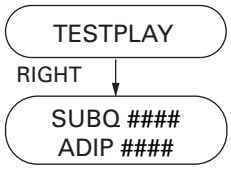
• When the setting value has three digits.


The first digit
(Initial value)
"F" key in the main unit
The second digit
"F" key in the main unit
The third digit
*** ⌴⌴ ○○○
"▲" key in the main unit

* Pressing RIGHT/LEFT key in each status where a setting value is displayed changes the value in the digit you selected in the range from 0_H through F_H.

● Continuous play

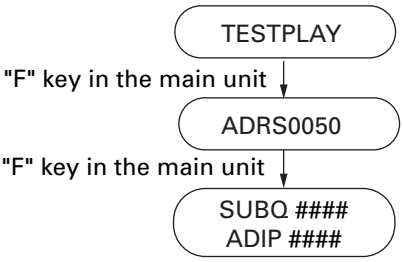
• When you start continuous play with the position which is picked up.



: Continuous play menu

: Continuous play (pit part)
: Continuous play (groove part)
: Address

• When you start continuous play with any address.

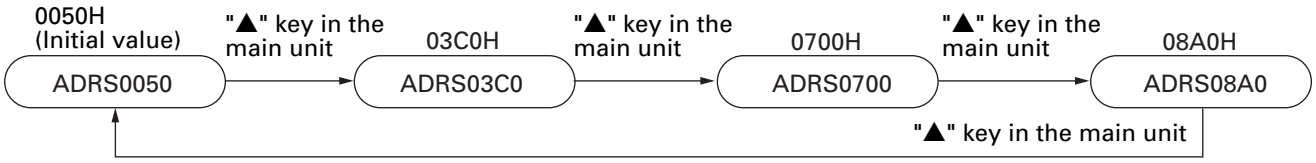


: Continuous play menu

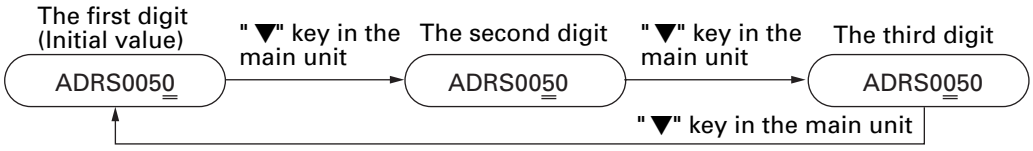
: Specify the address from which you start playing.

: Continuous play (pit part)
: Continuous play (groove part)
: Address

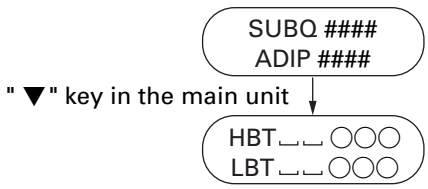
* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" status.
* Pressing "▲" key in the main unit in the status where you specified the address to start playing switches the digit of the address that will be changed.



* Pressing "▼" key in the main unit in the status where you specified the address to start playing switches the digit of the address as shown below.



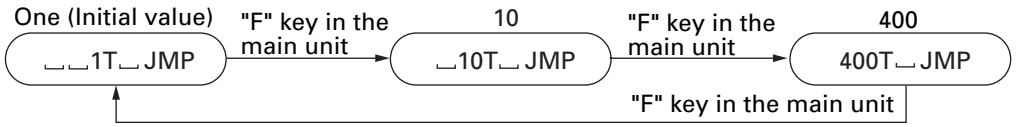
* Pressing RIGHT/LEFT key in each the status where you specified the address to start playing switches the value in the digit you selected in the range from 0H through FH.
* Pressing "▼" key in the main unit in the continuous play status switches to the B-ATT setting status in the ATT manual tuning.



: Continuous play (pit part)
: Continuous play (groove part)
: Address

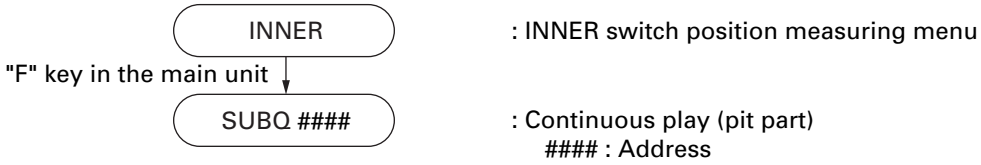
: B-ATT (Focus) setting of high reflection pit part
: B-ATT (Focus) setting of low reflection pit part
○○○ : ATT setting value

* Pressing "F" key in the main unit in switches the number of trucks to be jumped as shown below.



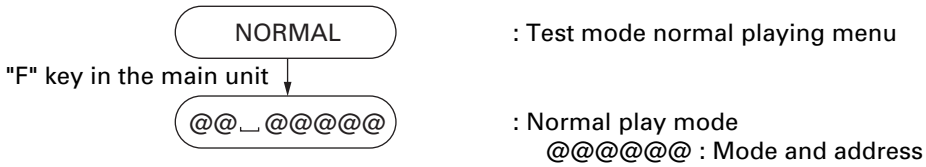
* Pressing RIGHT key in the continuous play status jumps the trucks by the number you specified in the direction of the outer circumference.
* Pressing LEFT key in the continuous play status jumps the trucks by the number you specified in the direction of the inner circumference.

● Measuring the position of INNER switch



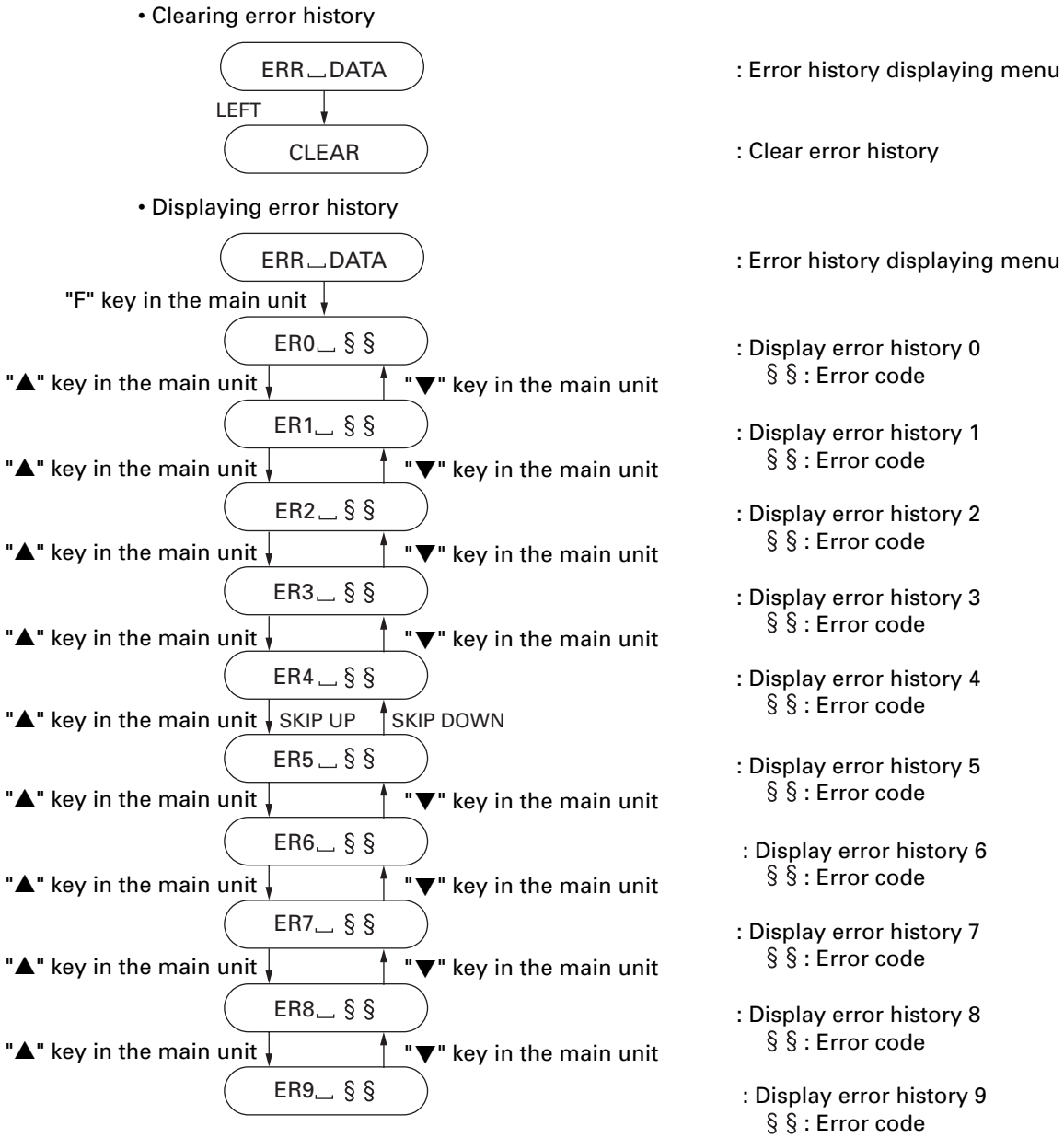
* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .

● Test mode normal play



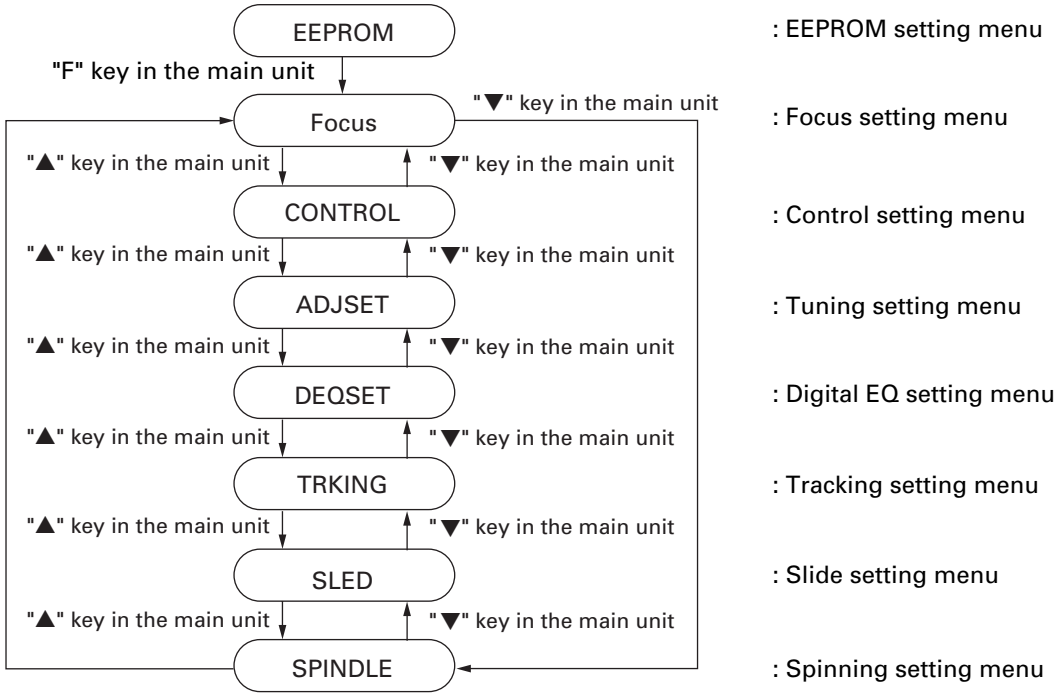
* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .

● Displaying error history



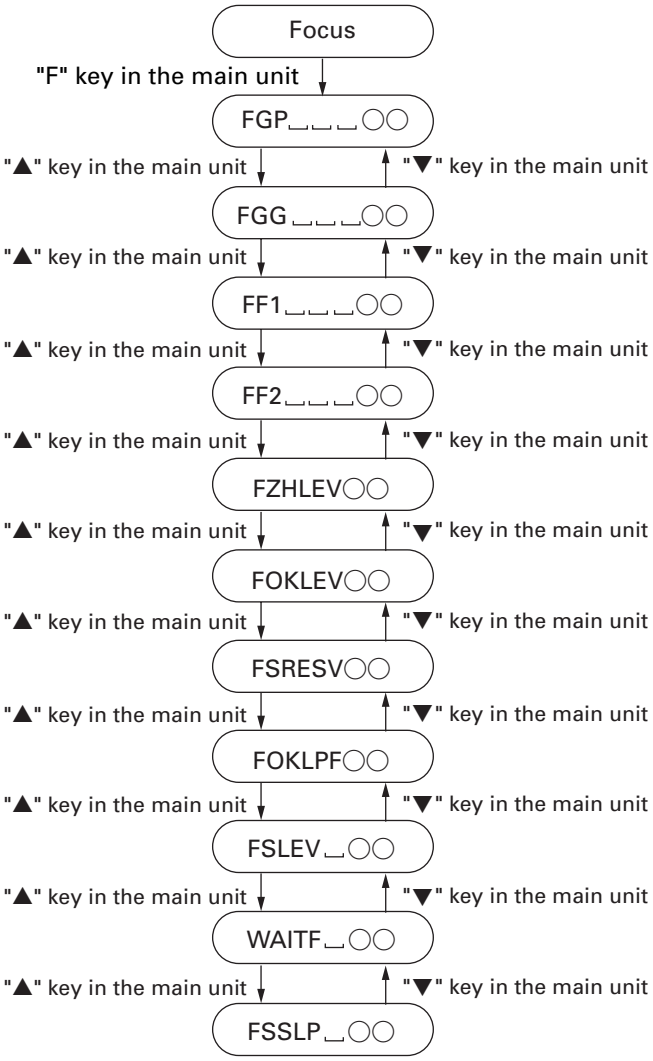
* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .

● Setting EEPROM


EEPROM
: EEPROM setting menu
"F" key in the main unit
Focus
"▼" key in the main unit
: Focus setting menu
"▲" key in the main unit
"▼" key in the main unit
CONTROL
: Control setting menu
"▲" key in the main unit
"▼" key in the main unit
ADJSET
: Tuning setting menu
"▲" key in the main unit
"▼" key in the main unit
DEQSET
: Digital EQ setting menu
"▲" key in the main unit
"▼" key in the main unit
TRKING
: Tracking setting menu
"▲" key in the main unit
"▼" key in the main unit
SLED
: Slide setting menu
"▲" key in the main unit
"▼" key in the main unit
SPINDLE
: Spinning setting menu

* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .

● Setting focus



: Focus setting menu

: Setting value of the gain constant for focus based loop filter (PIT)
○○ : Setting value

: Setting value of the gain constant for focus based loop filter (GRV)
○○ : Setting value

: The first setting value of the number specifying f for focus based loop filter
○○ : Setting value

: The second setting value of the number specifying f for focus based loop filter
○○ : Setting value

: Setting value of the hysteresis level to be detected in FZC
○○ : Setting value

: Setting value of the hysteresis level to be detected in FOK
○○ : Setting value

: Reserve for focus control
○○ : Setting value

: Setting value of LPF factor during FOK generation
○○ : Setting value

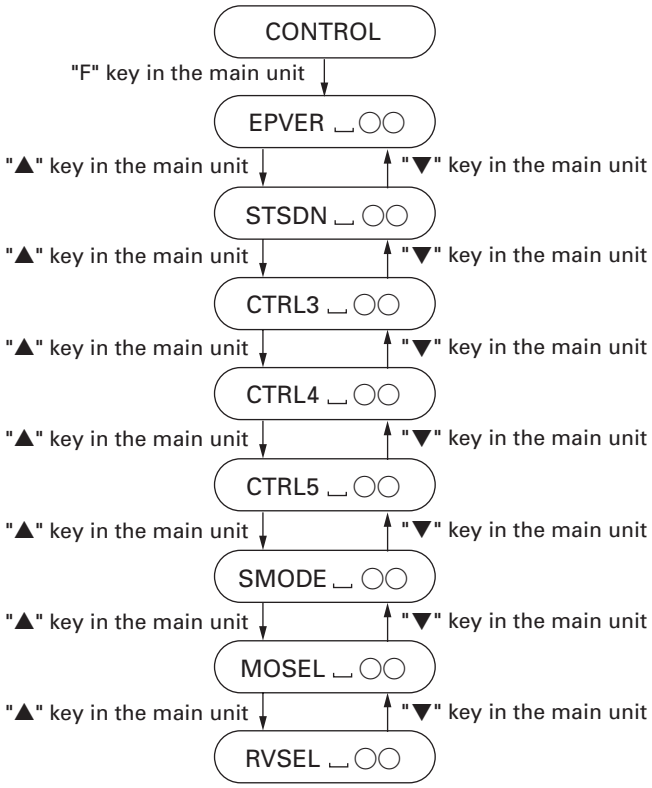
: Amplitude of focus search
○○ : Setting value

: Setting value of wait time during feeding with auto focus
○○ : Setting value

: Slope of focus search
○○ : Setting value

* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .
* Pressing RIGHT/LEFT key in each status switches the setting value in the range from 00_H through FF_H. (Upper limits depend on items.)

● Setting control



: Control setting menu

: EEPROM version
○○ : Setting value

: The number of accumulated sectors when voice starts.
○○ : Setting value

: Setting value 3 for controlling
○○ : Setting value

: Setting value 4 for controlling
○○ : Setting value

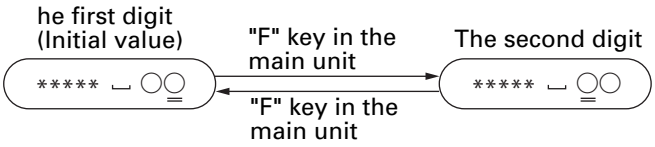
: Setting value 5 for control
○○ : Setting value

: Special mode select data
○○ : Setting value

: Monitor select data
○○ : Setting value

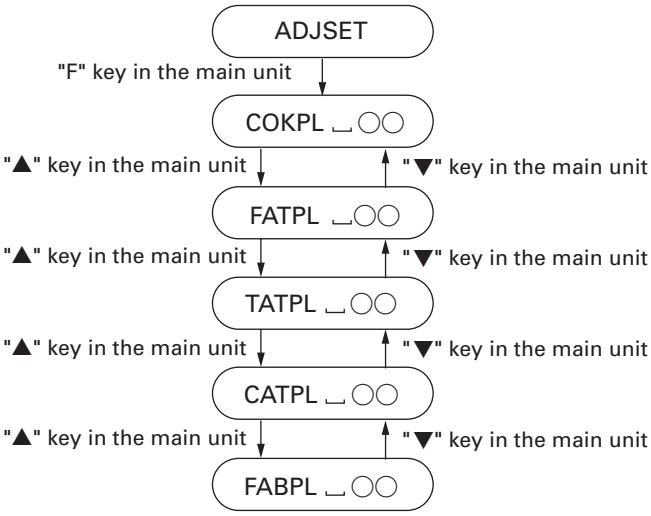
: Setting data related to controlling and others
○○ : Setting value

* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .
* Pressing "F" key in the main unit in each status where a setting value is displayed changes the digit of the setting value that will be changed.



* Pressing RIGHT/LEFT key in each status where a setting value is displayed changes the value in the digit you selected in the range from 0_H through F_H.

● Tuning setting


ADJSET
"F" key in the main unit
COKPL ␣ ○○
"▲" key in the main unit
"▼" key in the main unit
FATPL ␣ ○○
"▲" key in the main unit
"▼" key in the main unit
TATPL ␣ ○○
"▲" key in the main unit
"▼" key in the main unit
CATPL ␣ ○○
"▲" key in the main unit
"▼" key in the main unit
FABPL ␣ ○○

: Environment setting menu

: Reference value of COUT level for tuning
○○ : Setting value

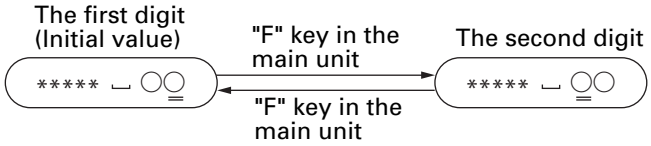
: Focus ATT reference value
○○ : Setting value

: Tracking ATT reference value
○○ : Setting value

: TCRS ATT reference value
○○ : Setting value

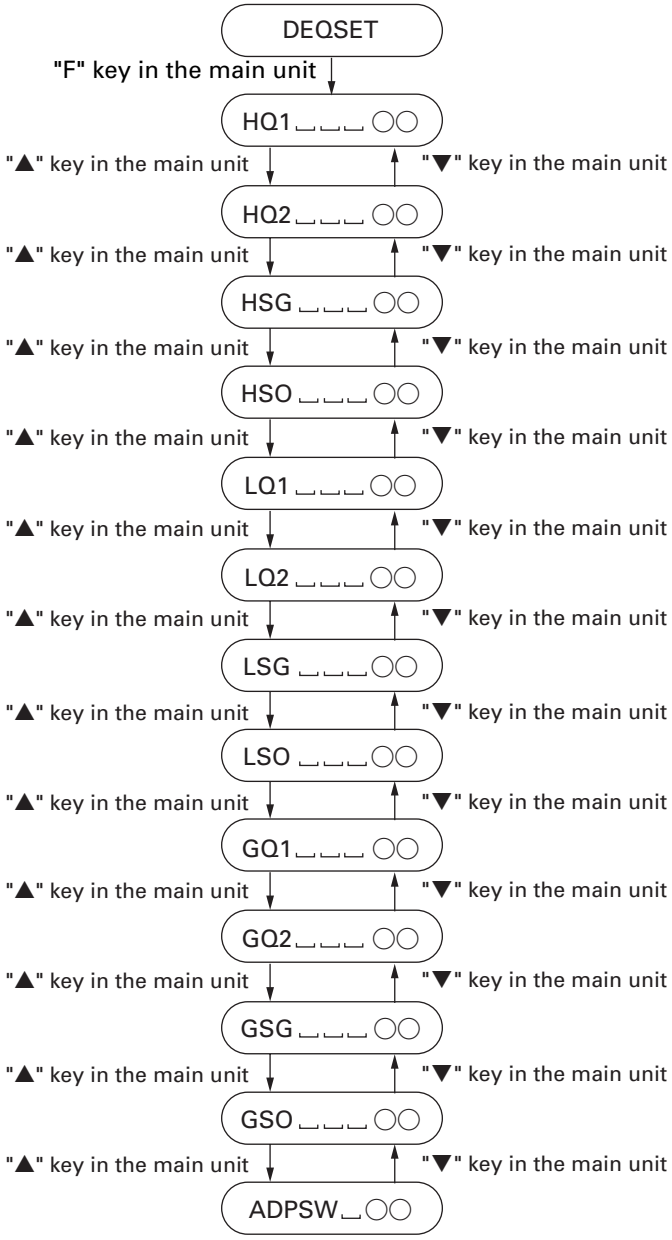
: Focus balance factor
○○ : Setting value

* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .
* Pressing "F" key in the main unit in each status where a setting value is displayed changes the digit of the setting value that will be changed.



* Pressing RIGHT/LEFT key in each status where a setting value is displayed changes the value in the digit you selected in the range from 0_H through F_H.

● Setting digital EQ



: Digital EQ setting menu

: Digital EQ tap factor A, D for high reflection pit part
○○ : Setting value

: Digital EQ tap factor B, C for high reflection pit part
○○ : Setting value

: Gain of auto level slicer for high reflection pit part
○○ : Setting value

: Slice level offset of auto level slicer for high reflection pit part
○○ : Setting value

: Digital EQ tap factor A, D for low reflection pit part
○○ : Setting value

: Digital EQ tap factor B, C for low reflection pit part
○○ : Setting value

: Gain of auto level slicer for low reflection pit part
○○ : Setting value

: Slice level offset of auto level slicer for low reflection pit part
○○ : Setting value

: Digital EQ tap factor A, D for low reflection groove part
○○ : Setting value

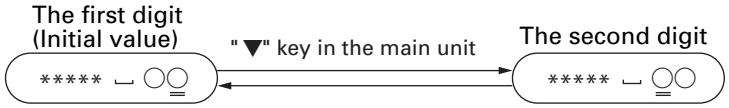
: Digital EQ tap factor B, C for low reflection groove part
○○ : Setting value

: Gain of auto level slicer for low reflection groove part
○○ : Setting value

: Slice level offset of auto level slicer for low reflection groove part
○○ : Setting value

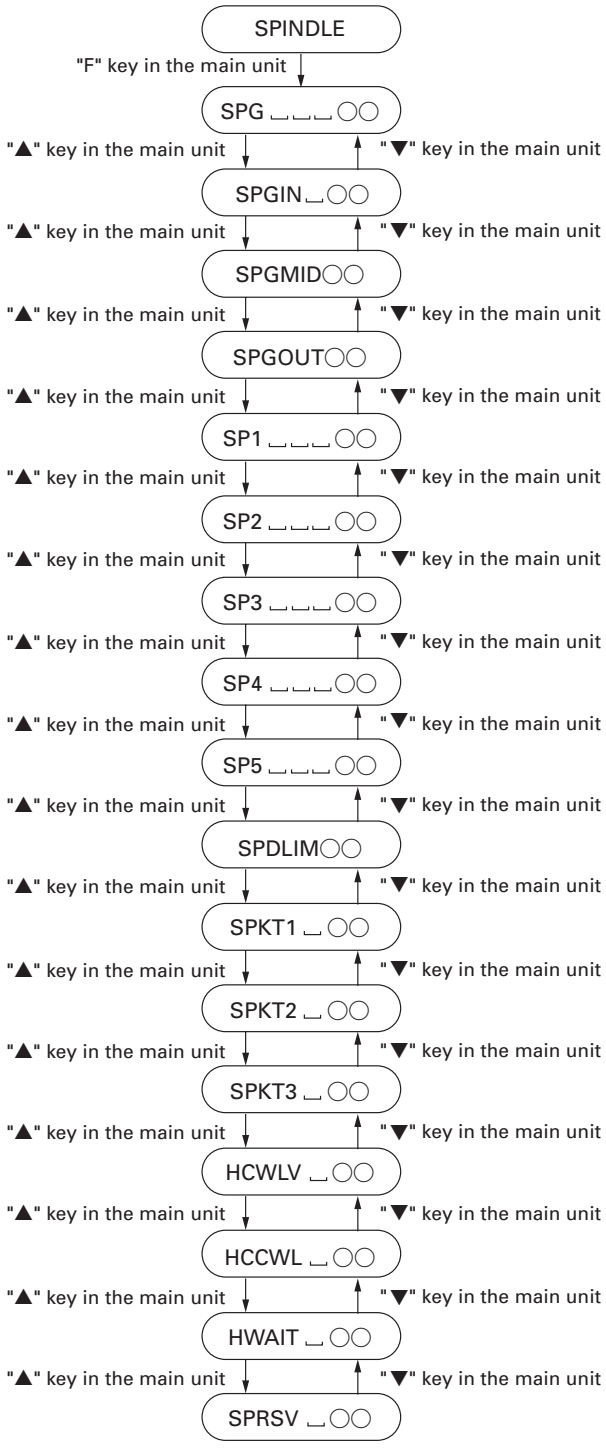
: Reverse switch of servo AD input
○○ : Setting value

* Pressing "F" key in the main unit in each status switches to "TEST STOP" .
* Pressing "F" key in the main unit in each status where a setting value is displayed changes the digit of the setting value that will be changed.



* Pressing RIGHT/LEFT key in each status where a setting value is displayed changes the value in the digit you selected in the range from 0H through FH.

● Setting spinning



: Spinning setting menu

: Setting value of the gain constant for spin based loop filter
○○ : Setting value

: Setting value of the gain constant for spin based loop filter (Inner circumference)
○○ : Setting value

: Setting value of the gain constant for spin based loop filter (Mid circumference)
○○ : Setting value

: Setting value of the gain constant for spin based loop filter (Outer circumference)
○○ : Setting value

: The first setting value of the number specifying f for spin based loop filter
○○ : Setting value

: The second setting value of the number specifying f for spin based loop filter
○○ : Setting value

: The third setting value of the number specifying f for spin based loop filter
○○ : Setting value

: The fourth setting value of the number specifying f for spin based loop filter
○○ : Setting value

: The fifth setting value of the number specifying f for spin based loop filter
○○ : Setting value

: Limiter setting value of spin drive PWM duty
○○ : Setting value

: Initial kick level of spinning (duration)
○○ : Setting value

: Rotation kick level of spinning (time)
○○ : Setting value

: Interval between spinning and resuming
○○ : Setting value

: Level to determine high speed forward rotation
○○ : Setting value

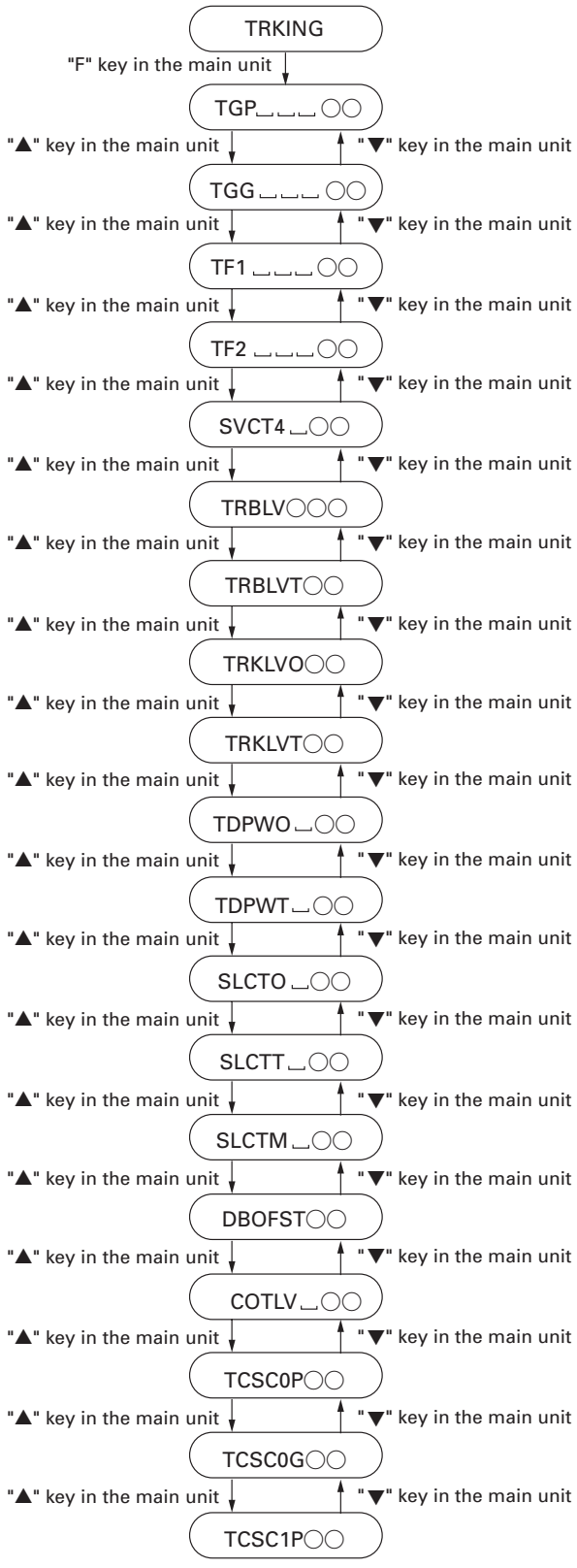
: Level to determine high speed backward rotation
○○ : Setting value

: KICK wait during high speed rotation
○○ : Setting value

: Reserve for spindle controlling
○○ : Setting value

* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .
* Pressing RIGHT/LEFT key in each status where a setting value is displayed changes the value in the digit you selected in the range from 0_H through F_H.
(Upper limits depend on items.)

● Setting tracking



: Tracking setting menu

: Setting value of the gain constant for tracking based loop filter (PIT)
○○ : Setting value

: Setting value of the gain constant for tracking based loop filter (GRV)
○○ : Setting value

: The first setting value of the number specifying f for spin based loop filter
○○ : Setting value

: The second setting value of the number specifying f for spin based loop filter
○○ : Setting value

: Tracking filter switch
○○ : Setting value

: Break level setting for jumping over one truck
○○ : Setting value

: Break level setting for jumping over ten trucks
○○ : Setting value

: Kick pulse level setting for jumping over one truck
○○ : Setting value

: Kick pulse level setting for jumping over ten trucks
○○ : Setting value

: Drive pulse width time setting for jumping over one truck
○○ : Setting value

: Drive pulse width time setting for jumping over ten trucks
○○ : Setting value

: Nonslid time setting for jumping over one truck
○○ : Setting value

: Nonslid time setting for jumping over ten trucks
○○ : Setting value

: Move nonslid time setting
○○ : Setting value

: PWM output offset setting
○○ : Setting value

: Comparison level setting value during COUT generation
○○ : Setting value

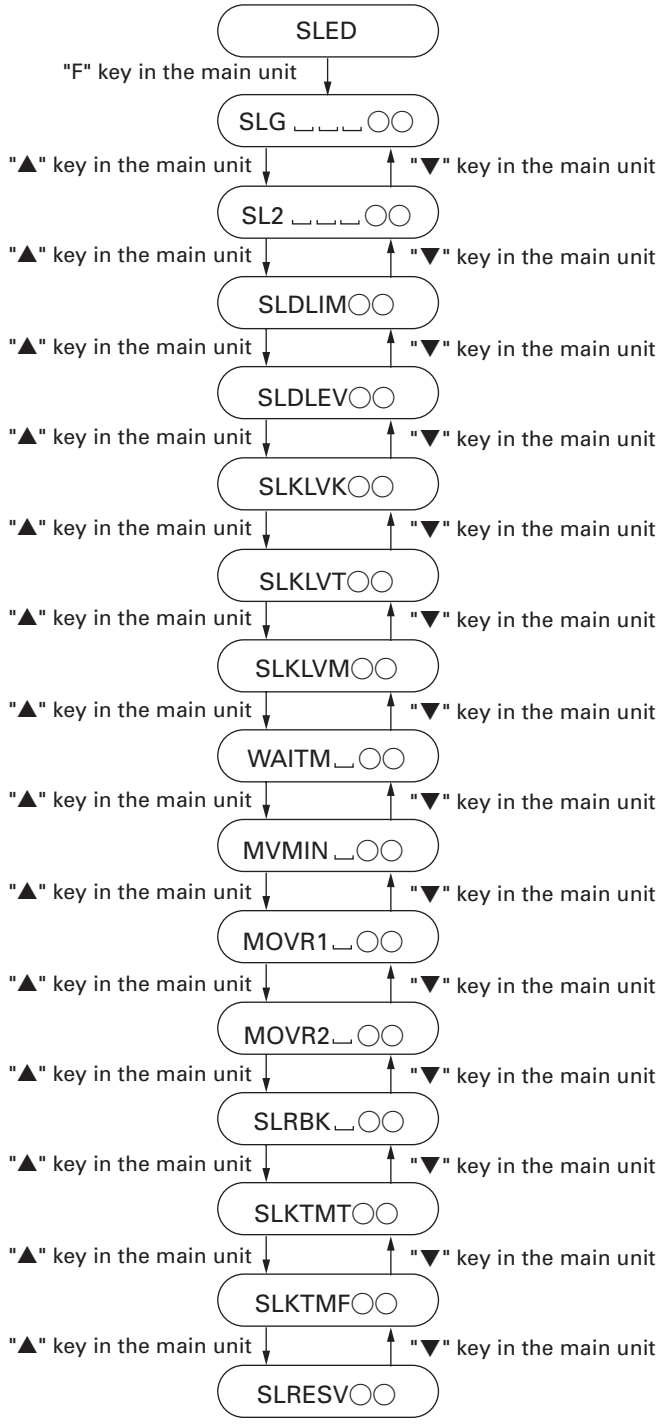
: TCRSC0 level setting (pit part)
○○ : Setting value

: TCRSC0 level setting (groove part)
○○ : Setting value

: TCRSC1 level setting (pit part)
○○ : Setting value

* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .
* Pressing RIGHT/LEFT key in each status where a setting value is displayed changes the value in the digit you selected in the range from 00_H through FF_H.
(Upper limits depend on items.)

● Setting slide



: Slide setting menu

: Thread gain constant
○○ : Setting value

: Slide filter factor 2
○○ : Setting value

: Slide output limiter
○○ : Setting value

: Slide output dead zone
○○ : Setting value

: Kick level during compelled slide move
○○ : Setting value

: Kick level for jumping over ten trucks
○○ : Setting value

: Kick level during move
○○ : Setting value

: Feed wait time after move
○○ : Setting value

: Minimum number of move trucks to be started
○○ : Setting value

: Move overrun table 1
○○ : Setting value

: Move overrun table 2
○○ : Setting value

: Break setting during feeding through inner circumference
○○ : Setting value

: Supplementary feeding time for jumping over ten trucks
○○ : Setting value

: PIT GRV feeding time
○○ : Setting value

: Thread control reserve
○○ : Setting value

* Pressing "SCR" key in the main unit in each status switches to "TEST STOP" .
* Pressing RIGHT/LEFT key in each status where a setting value is displayed changes the value in the digit you selected in the range from 00_H through FF_H.
(Upper limits depend on items.)

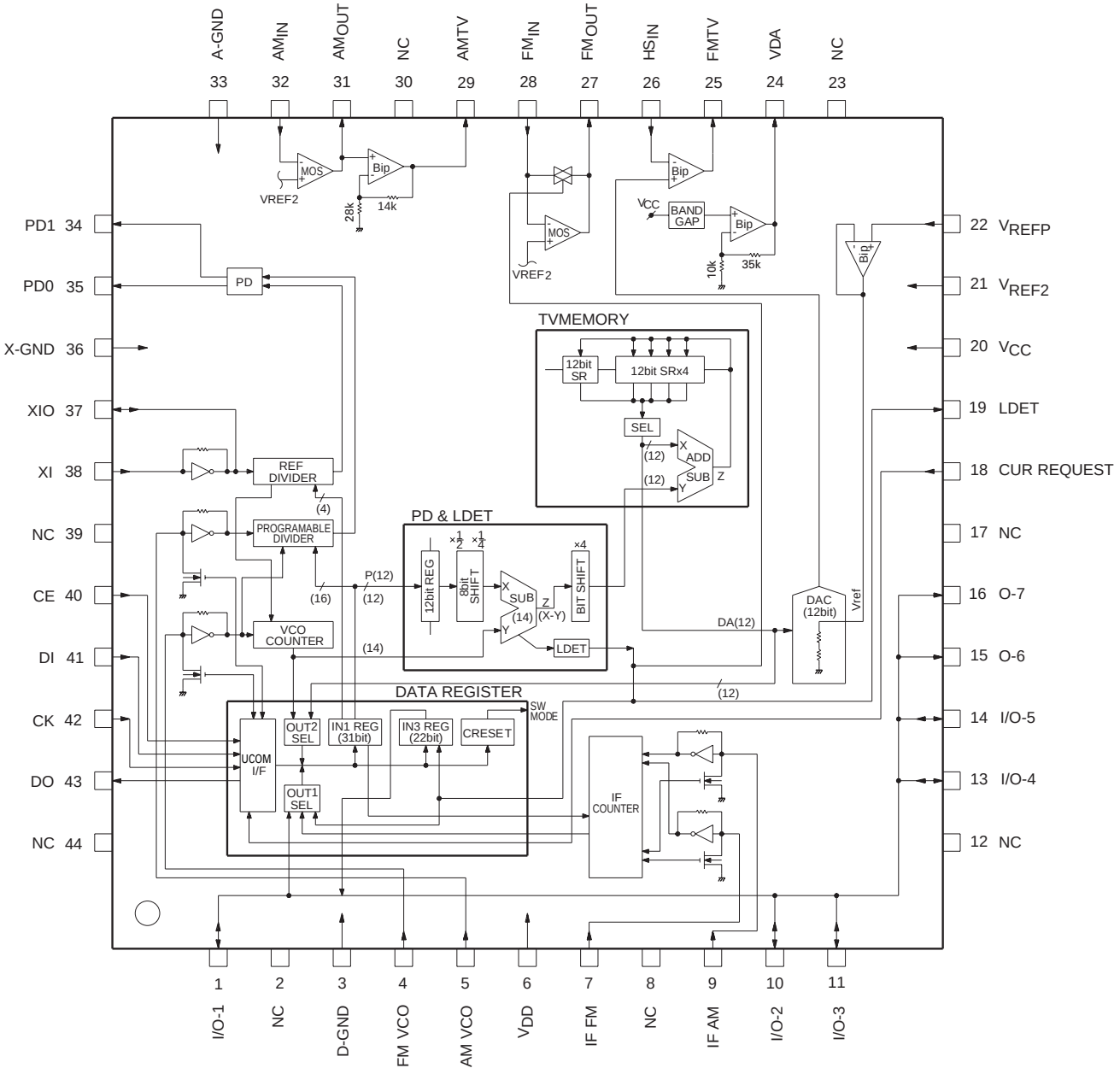
7. GENERAL INFORMATION

7.1 PARTS

7.1.1 IC

PM2007A	1245730308
PD4960A	1245730310
PD6277A	1245730313
LC75874W	1245730086
PML003AM	1245730184
1245730345	1245730631
1245730449	

PM2007A

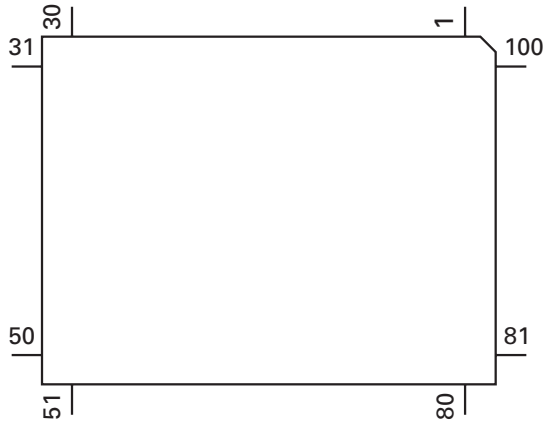


● **Pin Functions (PD4960A)**

Pin No.	Pin Name	I/O	Function and Operation
1	SWVDD	O	Keyboard unit power supply control output
2	$\overline{\text{DSENS}}$	I	Grille detach sense input
3	NC		Not used
4	$\overline{\text{ISENS}}$	I	Illumination power supply sence input
5	TESTIN	I	Test program mode input
6	$\overline{\text{DRST}}$	O	RDS decoder reset output
7	NC		Not used
8	$\overline{\text{SK}}$	I	SK signal input
9,10	NC		Not used
11	$\overline{\text{RESET}}$	I	Reset input
12	XT2		Not used
13	XT1		Not used
14	VSS		GND
15	X2		Crystal oscillator connection pin
16	X1		Crystal oscillator connection pin
17	REGOFF		Not used
18	REGC		Not used
19	VDD		Power supply
20	ILMPW	O	Illumination power supply control output
21	SYSPWR	O	System power control output
22	$\overline{\text{ADPW}}$	O	A/D converter power supply control output
23	LCDPW	O	LCD back light power supply control output
24	IPPW	O	Power supply control output for IP BUS interface IC
25	ASENBO	O	Slave power supply control output
26	AMPW	O	AM power supply control output
27	TELIN	I	Telephone mute input
28	$\overline{\text{MUTE}}$	O	System mute output
29	DIM	O	Dimmer select output
30	FMPW	O	FM power supply control output
31,32	NC		Not used
33	VCK	O	Clock output for electronic volume
34	VST	O	Strobe pulse output for electronic volume
35	VDT	O	Data output for electronic volume
36	$\overline{\text{TMUTE}}$	O	Tuner mute output
37	DRELAY	O	External relay output
38	SD	I	Station detector input
39	$\overline{\text{ST}}$	I	FM stereo input
40	VSS		GND
41	VDD		Power supply
42	$\overline{\text{MDSENS}}$	I	RDS modulation detect input
43	NC		Not used
44	$\overline{\text{RDSLK}}$	I	RDS LK signal input
45	$\overline{\text{CURRQ}}$	O	RDS tuning voltage FIX output
46	RDT	I	RDS Fdata input
47	NC		Not used
48	DRSENS	I	Door open/close sense input
49	DRSYS	O	Door system select output
50	DLED	O	Alarm LED output
51	DALMON	O	DFS alarm output
52–61	NC		Not used
62	PCL	O	Clock adjustment output
63	$\overline{\text{BRXEN}}$	I/O	P-BUS reception enable input/output
64	$\overline{\text{BSRQ}}$	I	P-BUS service request output pin
65	BSCK	I/O	P-BUS serial clock input/output
66	BSI	I	P–BUS serial data input
67	BSO	O	P–BUS serial data output
68	$\overline{\text{BRST}}$	I	P–BUS reset input

Pin No.	Pin Name	I/O	Function and Operation
69–72	NC		Not used
73	TEST	I	Test terminal
74	SL	I	Signal level input from tuner
75	MODEL	I	Model select input
76	CL	I	Synchronizing signal input of display data latch
77	NL	I	RDS noise level input
78–81	NC		Not used
82	AVDD		A/D converter power supply
83	AVREF1		A/D converter reference voltage
84	GND		A/D converter GND
85	RX	I	IP BUS data input
86	TX	O	IP BUS data output
87	GND		GND
88	$\overline{\text{LDET}}$	I	RDS PLL lock sense input
89	$\overline{\text{RCK}}$	I	RDS demodulation clock input
90	RDS57K	I	RDS 57kHzBP-OUT sense input
91	GND		GND
92	$\overline{\text{ASENS}}$	I	ACC power sense input
93	$\overline{\text{BSENS}}$	I	Back up power sense input
94	TUNPDI	I	PLL IC data input
95	KYDT	I	Key data input
96	DPDT	O	Display data output
97	TUNPCK	O	Serial clock output for PLL IC
98	TUNPDO	O	Data output for PLL IC
99	TUNPCE	O	Chip enable output for PLL IC
100	PEE	O	Beep tone output

*PD4960A

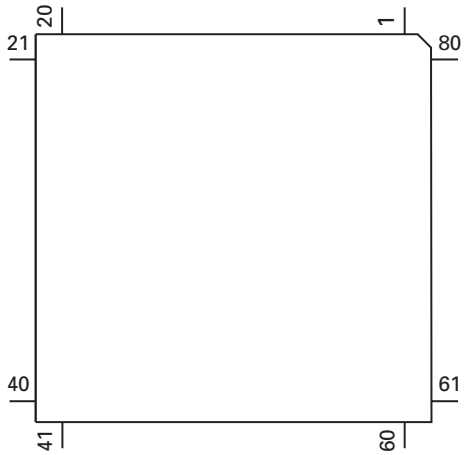


IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

● **Pin Functions (PD6277A)**

Pin No.	Pin Name	I/O	Format	Function and Operation
1	VSS			GND
2	X1			Crystal oscillator connection pin
3	X0			Crystal oscillator connection pin
4	$\overline{\text{RESET}}$	I		System reset input
5	MOD1	I		Operation mode appointment input
6	MOD0	I		Operation mode appointment input
7	LED	O	C	LED control output
8	S0	O	C	System micro computer UART communication data output
9	S1	I		System micro computer UART communication data input
10	REM	I		Remote control reception input
11	$\overline{\text{DIM}}$	O	C	Dimmer output
12	ILM	O	C	Illumination color select output
13–16	$\overline{\text{KD4}}$–$\overline{\text{KD1}}$	I		Key data input
17–22	$\overline{\text{KST6}}$–$\overline{1}$	O	C	Key strobe output
23	VCC			Power supply
24	$\overline{\text{INH}}$	O	N	LCD driver display inhibit output
25	CE	O	N	Chip enable output for display driver
26	CL	O	N	Synchronizing signal output for display driver
27	DI	O	N	Data output for display driver
28–73	SEG45-0	O	L	LCD segment output
74–77	COM3–0	O	L	LCD common output
78	V3			LCD drive power supply
79	V2			LCD bias power supply
80	V1			LCD bias power supply

*PD6277A

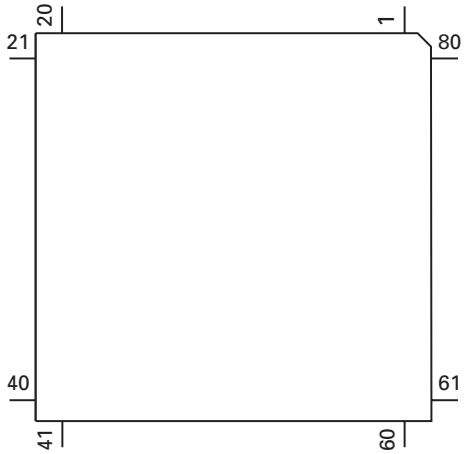


Format	Meaning
C	C MOS
N	N channel open drain
L	LCD C output

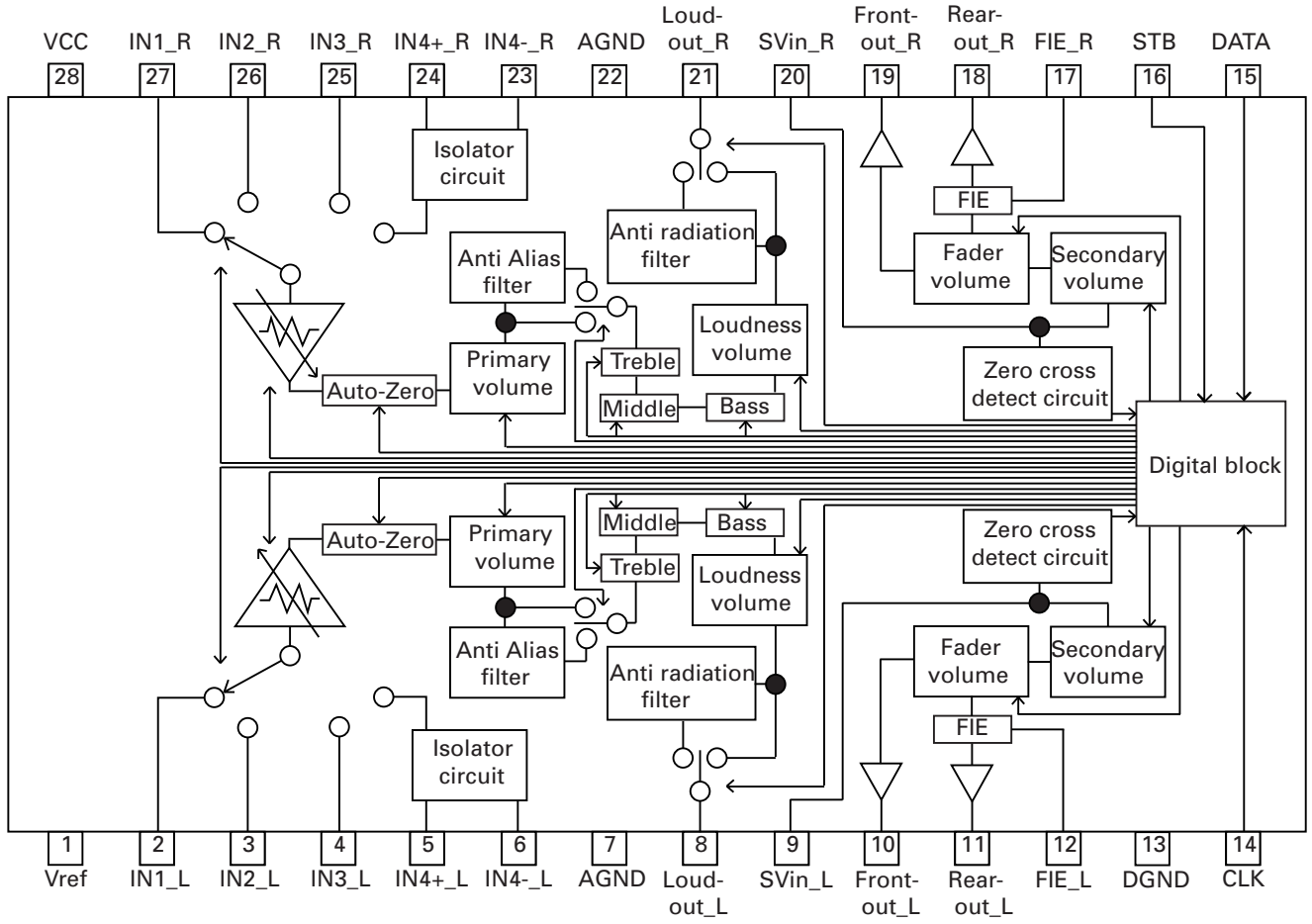
● **Pin Functions (LC75874W)**

Pin No.	Pin Name	I/O	Function and Operation
1–64	SE3-66	O	LCD segment signal output
65–68	CO1-CO4	O	LCD common signal output
69	VDD		Power supply
70	VLCD		LCD Power supply
71	VLCD1		LCD bias power supply
72	VLCD2		LCD bias power supply
73	VSS		GND
74	OSC	I/O	
75	$\overline{\text{LINH}}$	I	Inhibit input from IC901
76	CE	I	Chip enable output pin for LCD driver
77	CL	I	Clock output for LCD driver
78	DI	I	Data output for LCD driver
79,80	SE1,SE2	O	LCD segment signal

LC75874W



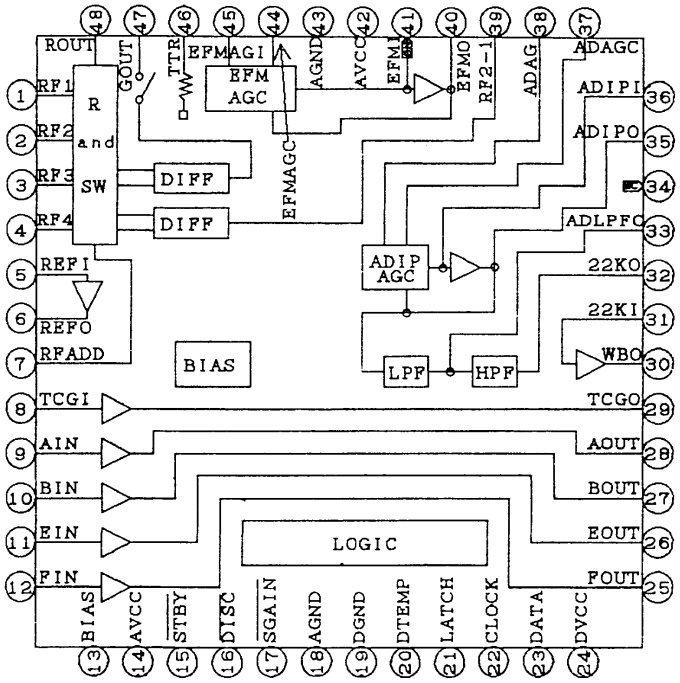
PML003AM



● **Pin Functions (1245730345)**

Pin No.	Pin Name	I/O	Function and Operation
1-4	RF1-4	I	RF signal input terminals 1-4 Input RF signal output from pickup
5	REFI	I	Reference voltage amplifier input
6	REFO	O	Reference voltage amplifier output
7	RFADD	O	Terminal outputting added resistance of RF 1-4
8	TCGI	I	Terminal amplified inputting track cross detected signal at groove
9	AIN	I	Inverted input terminal of signal amplifier for the servo (Focus servo based)
10	BIN	I	Inverted input terminal of signal amplifier for the servo (Focus servo based)
11	EIN	I	Inverted input terminal of signal amplifier for the servo (Tracking servo based)
12	FIN	I	Inverted input terminal of signal amplifier for the servo (Tracking servo based)
13	BIAS	I	Bias input
14	AVCC		Analog power supply
15	XSTBY	O	Logic signal outputting terminal (Outputs inverted STBY signal)
16	XDISC	O	Logic signal outputting terminal (Outputs inverted DISC signal)
17	XGAIN	O	Logic signal outputting terminal (Outputs inverted SGAIN signal)
18	AGND		Analog GND
19	DGND		Digital GND
20	DTEMP	I	Chip temperature detection
21	LATCH	I	Latch signal input
22	CLOCK	I	Clock signal input
23	DATA	I	Serial data input
24	DVCC		Digital GND
25	FOUT	O	Output terminal of signal amplifier for the servo (Tracking servo based)
26	EOUT	O	Output terminal of signal amplifier for the servo (Tracking servo based)
27	BOPUT	O	Output terminal of signal amplifier for the servo (Focus servo based)
28	AOUT	O	Output terminal of signal amplifier for the servo (Focus servo based)
29	TCGO	O	Terminal amplified inputting tracking cross detected signal at groove
30	WBO	O	Converter output terminal for ADIP signal binarization
31	22KI	I	Converter input terminal for ADIP signal trinarization
32	22KO	O	ADIP signal HPF amplifier output
33	ADLPFO	O	ADIP signal LPF amplifier output
34	NC		Not used
35	ADIPO	O	ADIP signal pre-amplifier output
36	ADIPI	O	ADIP signal AGC amplifier output
37	ADAGC		ADIP signal AGC smoothing capacitor connection pin
38	ADAGI	I	ADIP signal AGC amplifier input
39	RF2-1		Differential signal of RF1 and RF2
40	EFMO	O	RF signal pre-amplifier output
41	EFMI	O	RF signal AGC amplifier output
42	AVCC		Analog power supply
43	AGND		Analog GND
44	EFMAGC		EFM signal AGC smoothing capacitor connection pin
45	EFMAGI	I	EFM signal AGC amplifier input
46	ATTR		47and 48 pin output signal attenuation terminal
47	GOUT	O	Outputs RF1+RF2+RF3–RF4 signal at groove
48	ROUT	O	Outputs added resistance of RF1-4 at PIT

1245730345

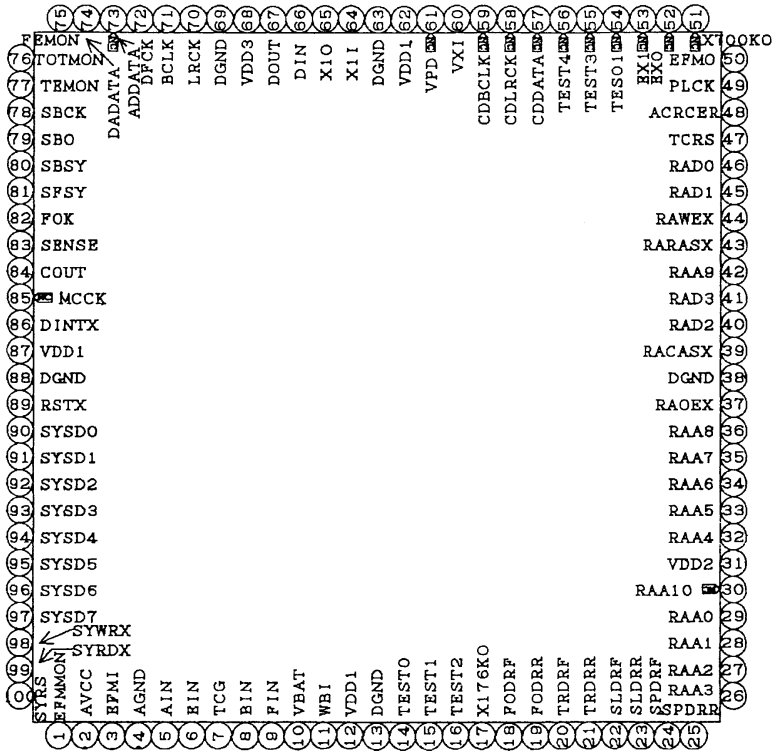

ROUT
GOUT
TTR
EFMAGI
EFM AGC
AGND
AVCC
EFMI
EFMO
RF2-1
ADAG
ADAGC
ADIPI
ADIPO
ADLPFO
22KO
22KI
WBO
TCGO
AOUT
BOUT
EOUT
FOUT
RF1
RF2
RF3
RF4
R and SW
DIFF
DIFF
EFMAGC
REFI
REFO
RFADD
BIAS
ADIP AGC
LPF
HPF
TCGI
AIN
BIN
EIN
FIN
LOGIC
BIAS
AVCC
STBY
DISC
SGAIN
AGND
DGND
DTEMP
LATCH
CLOCK
DATA
DVCC

● **Pin Functions (1245730449)**

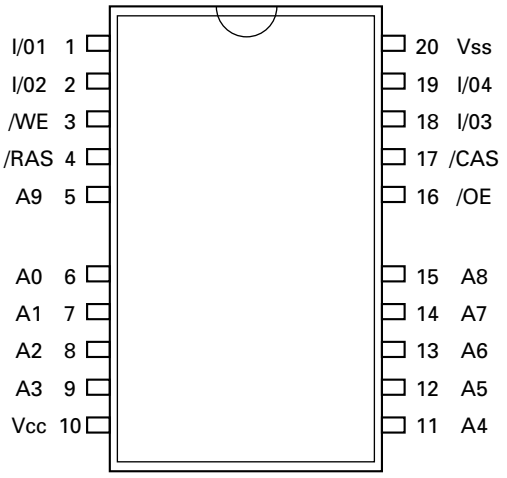
Pin No.	Pin Name	I/O	Function and Operation
1	EFMMON	O	EFM monitor output
2	AVCC		Analog power supply
3	EFMI	I	EFM signal input from RF AMP
4	AGND		Analog GND
5	AIN	I	Focus error signal A
6	EIN	I	Tracking error signal E
7	TCG	I	Tracking cross signal
8	BIN	I	Focus error signal B
9	FIN	I	Tracking error signal F
10	VBAT	I	Power supply voltage detection signal for constant voltage servo
11	WBI	I	ADIP wobble signal
12	VDD1		Digital power supply
13	DGND		Digital GND
14,15	TEST0,1	I	Test input normality : GND
16	TEST2	I	Test input en-deco/servo mode, ATRAC mode select normality : GND
17	X176KO	O	Clock output f=176.4KHz (4fs)
18	FODRF	O	Focus servo forward output PWM
19	FODRR	O	Focus servo reverse output PWM
20	TRDRF	O	Tracking servo forward output PWM
21	TRDRR	O	Tracking servo reverse output PWM
22	SLDRF	O	Slide servo forward output PWM
23	SLDRR	O	Slide servo reverse output PWM
24	SPDRF	O	Spindle servo forward output or spindle servo output PWM
25	SPDRR	O	Spindle servo reverse output or spindle rotary FWD/REV select
26-28	RAA3-1	O	Address output to external D-RAM ADR3-1
29	RAA0	O	Address output to external D-RAM ADR0 (LSB)
30	RAA10	O	Address output to external D-RAM ADR10 (MSB)
31	VDD2		D-RAM interface power supply
32-36	RAA4-8	O	Address output to external D-RAM ADR4-8
37	RA0EX	O	Data output enable signal to external D-RAM
38	DGND		Digital GND
39	RACASX	O	Column address strobe signal output to external D-RAM
40	RAD2	I/O	Data input/output with external D-RAM D2
41	RAD3	I/O	Data input/output with external D-RAM D3 (MSB)
42	RAA9	O	Address output to external D-RAM ADR9
43	RARASX	O	Row address strobe signal output to external D-RAM
44	RAWEX	O	Data write enable signal output to external D-RAM
45	RAD1	I/O	Data input/output with external D-RAM D1
46	RAD0	I/O	Data input/output with external D-RAM D0 (LSB)
47	TCRS	O	Track cross signal
48	ACRCER	O	ADIP CRC error flag monitor output
49	PLCK	O	EFM PLL clock output at playback
50	EFMO	O	Outputs EFM signal when recording Outputs C1F (C1 error flag) monitor when playbacking
51	X700KO	O	Clock output f=705.6KHz Dose not output clock when RSTX=0
52,53	EXPORT0,1	O	Microprocessor extended output port 0,1
54	TESO1	O	PLLLR Microprocessor extended output port 2 when switching
55	TEST3	I/O	PLLOSC Microprocessor extended output port 3 when switching
56	TEST4	I/O	EXTCLK Microprocessor extended output port 4 when switching
57	CDDATA	I/O	Inputs CD data for high speed dubbing Microprocessor extended output port 5 when switching
58	CDLRCK	I/O	Inputs CD LR clock for high speed dubbing Microprocessor extended output port 6 when switching
59	CDBCLK	I/O	Inputs CD bit clock for high speed dubbing Microprocessor extended output port 7 when switching
60	VXI	I	Inputs PLL clock for varipitch
61	VPO	O	Outputs PLL phase error for varipitch
62	VDD1		Digital power supply
63	DGND		Digital GND

Pin No.	Pin Name	I/O	Function and Operation
64	XI	I	Inputs oscillator 33.8688MHz
65	XO	O	Outputs oscillator 33.8688MHz
66	DIN	I	Digital input signal
67	DOUT	O	Digital output signal
68	VDD3		Internal PLL power supply
69	DGND		Digital GND
70	LRCK	O	Lch/Rch select output of audio data
71	BCLK	O	Shift clock of audio data
72	DFCK	O	AD/DA converter digital filter clock 256Fs
73	ADDATA	I	Audio data input
74	DADATA	O	Audio data output
75	FEMON	O	Focus error signal monitor output
76	TOTMON	O	Total signal monitor output
77	TEMON	O	Tracking error signal monitor output
78	SBCK	I	DIN subcode read clock EIAJ CP-309 format
79	SBO	O	DIN subcode read serial data EIAJ CP-309 format
80	SBSY	O	DIN subcode block synchronizing signal CP-309 format
81	SFSY	O	DIN subcode frame synchronizing signal CP-309 format
82	FOK	O	Focus OK detection signal "0" : Focus OK
83	SENSE	O	Servo condition detection signal "1": During pull in auto move, auto jump, auto focus
84	COUT	O	Track cross signal output
85	MCCK	O	Clock output for microcomputer Outputs clock when RSTX=0
86	DINTX	O	Interrupt request output to system control interface
87	VDD1		Digital power supply
88	DGND		Digital GND
89	RSTX	I	Chip reset input L : Reset
90-97	SYD0-7	I/O	System control interface data bus
98	SYWRX	I	System control interface register write pulse input
99	SYRDX	I	System control interface register read pulse input
100	SYRS	I	System control interface register select input

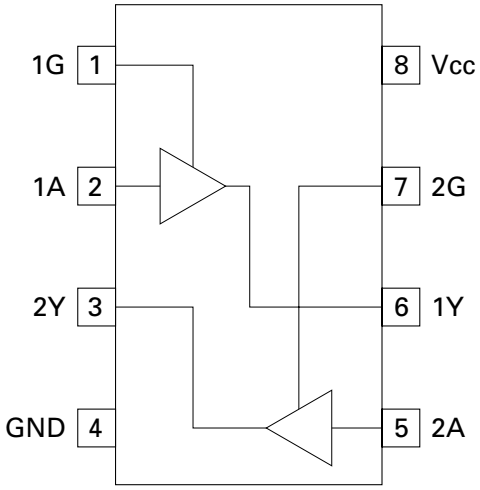
1245730449



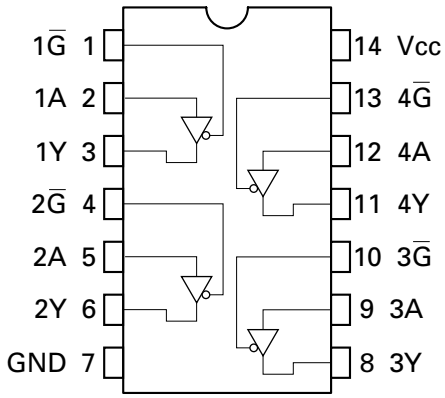
1245730308



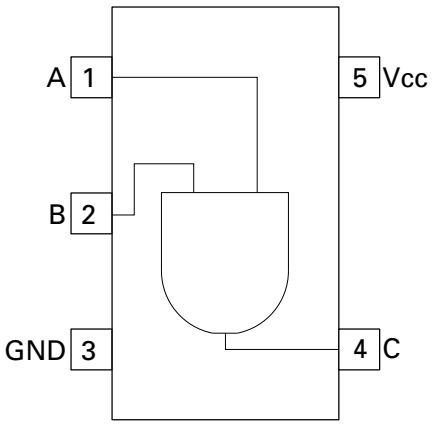
1245730310



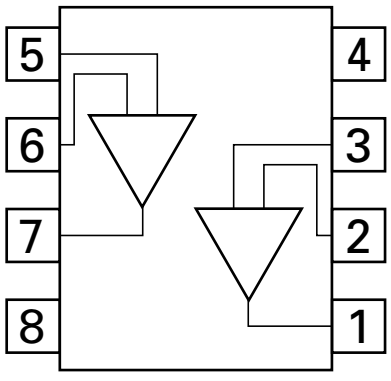
1245730313



1245730086



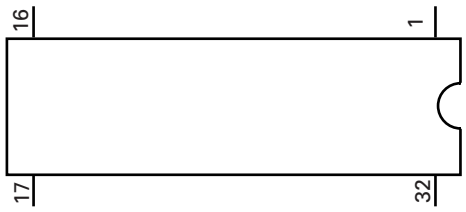
1105730631



● **Pin Functions (1245730184)**

Pin No.	Pin Name	I/O	Function and Operation
1	GND		Pre part GND
2	VG		Gate voltage supply
3	IN4R	I	CH4 reverse input
4	IN4F	I	CH4 forward input
5	VM4		Power part power supply
6	OUT4F	O	CH4 forward output
7	PGND4		Power part GND
8	OUT4R	O	CH4 reverse output
9	VM34		Power part GND
10	OUT3R	O	CH3 reverse output
11	PGND3		Power part GND
12	OUT3F	O	CH3 forward output
13	VM3		Power part power supply
14	IN3F	I	CH3 forward input
15	IN3R	I	CH3 reverse input
16	PSB		Power off
17	VDD		Pre part power supply
18	IN1R	I	CH1 reverse input
19	IN1F	I	CH1 forward input
20	VM1		Power part power supply
21	OUT1F	O	CH1 forward output
22	PGND1		Power part GND
23	OUT1R	O	CH1 reverse output
24	VM12		Power part power supply
25	OUT2R	O	CH2 reverse output
26	PGND2		Power part GND
27	OUT2F	O	CH2 forward output
28	VM2		Power part power supply
29	IN2F	I	CH2 forward input
30	IN2R	I	CH2 reverse input
31,32	NC		Not used

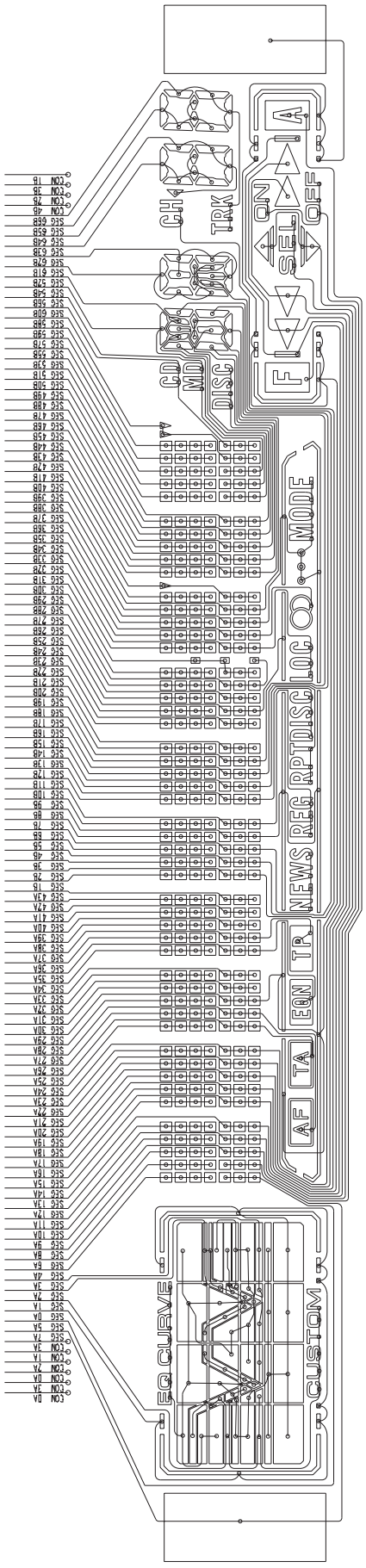
1245730184



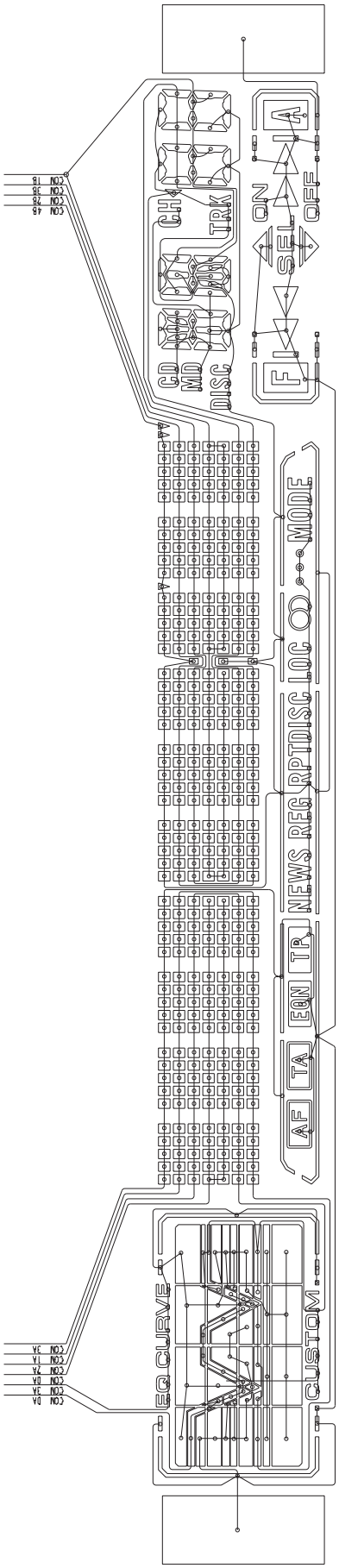
7.1.2 DISPLAY

● **CAW1490**

SEGMENT



COMMON



7.2 DIAGNOSIS

7.2.1 DISASSEMBLY

● **Removing the Case Unit(not shown)**

1. Remove the two screws.
2. Insert and turn a flat screwdriver to remove the case unit.

● **Removing the Detach Grille Assy**

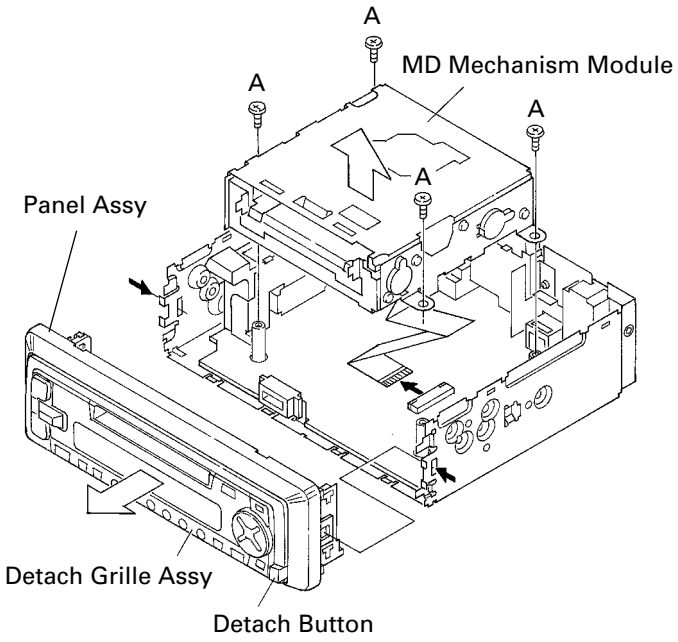
1. Press the detach button, and then remove the detach grille assy.

● **Removing the Panel Assy**

1. Disconnect the two stoppers, and then remove the panel assy.

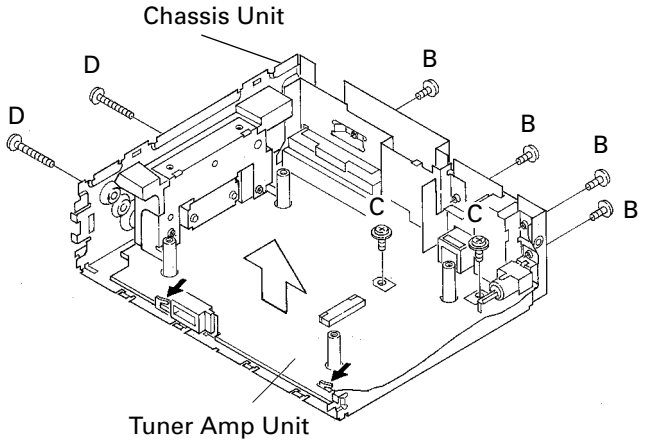
● **Removing the MD Mechanism Module**

1. Remove the four screws A.
2. Disconnect the connector indicated by arrow.
3. Remove the MD Mechanism Module.



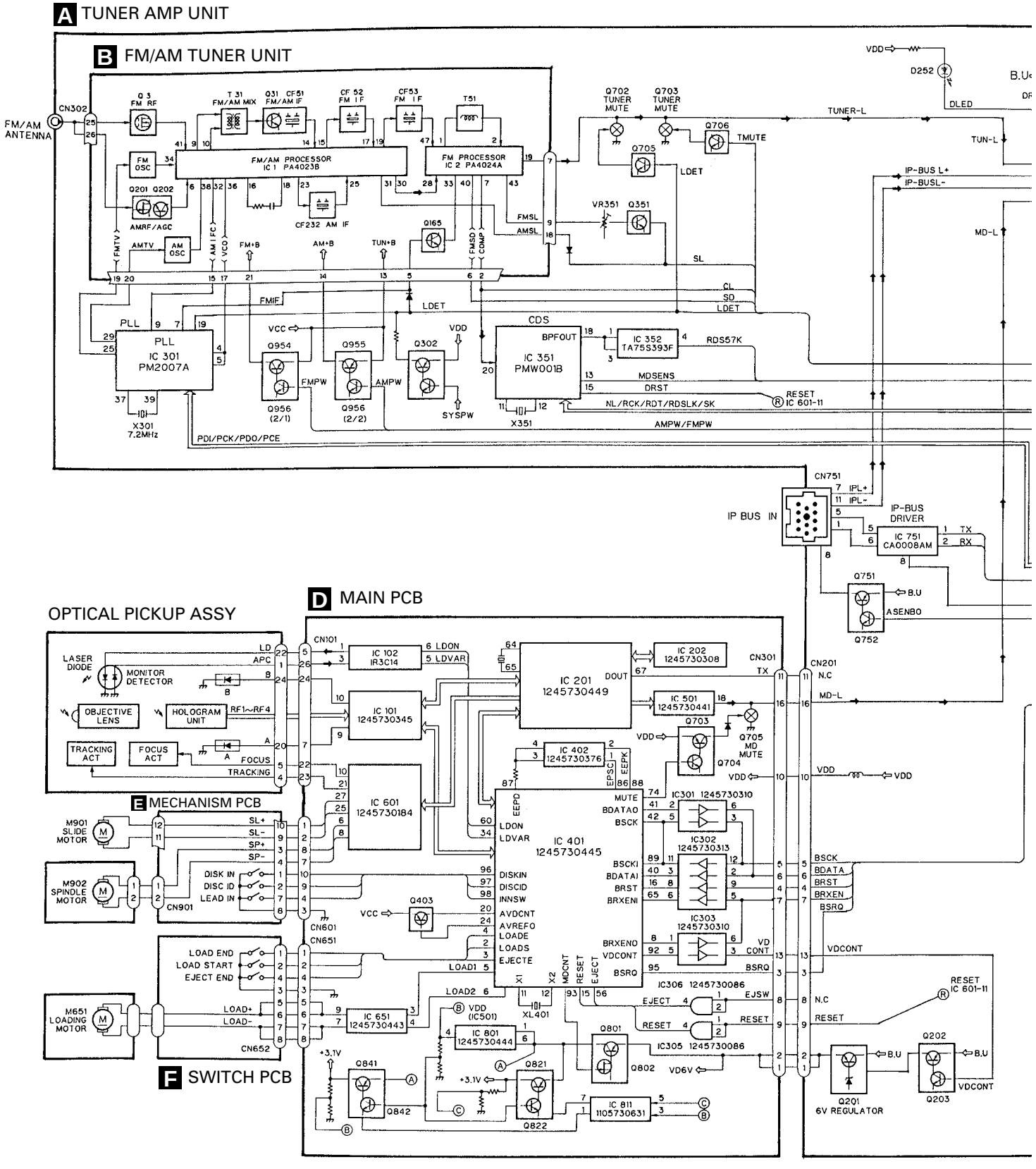
● **Removing the Tuner Amp Unit**

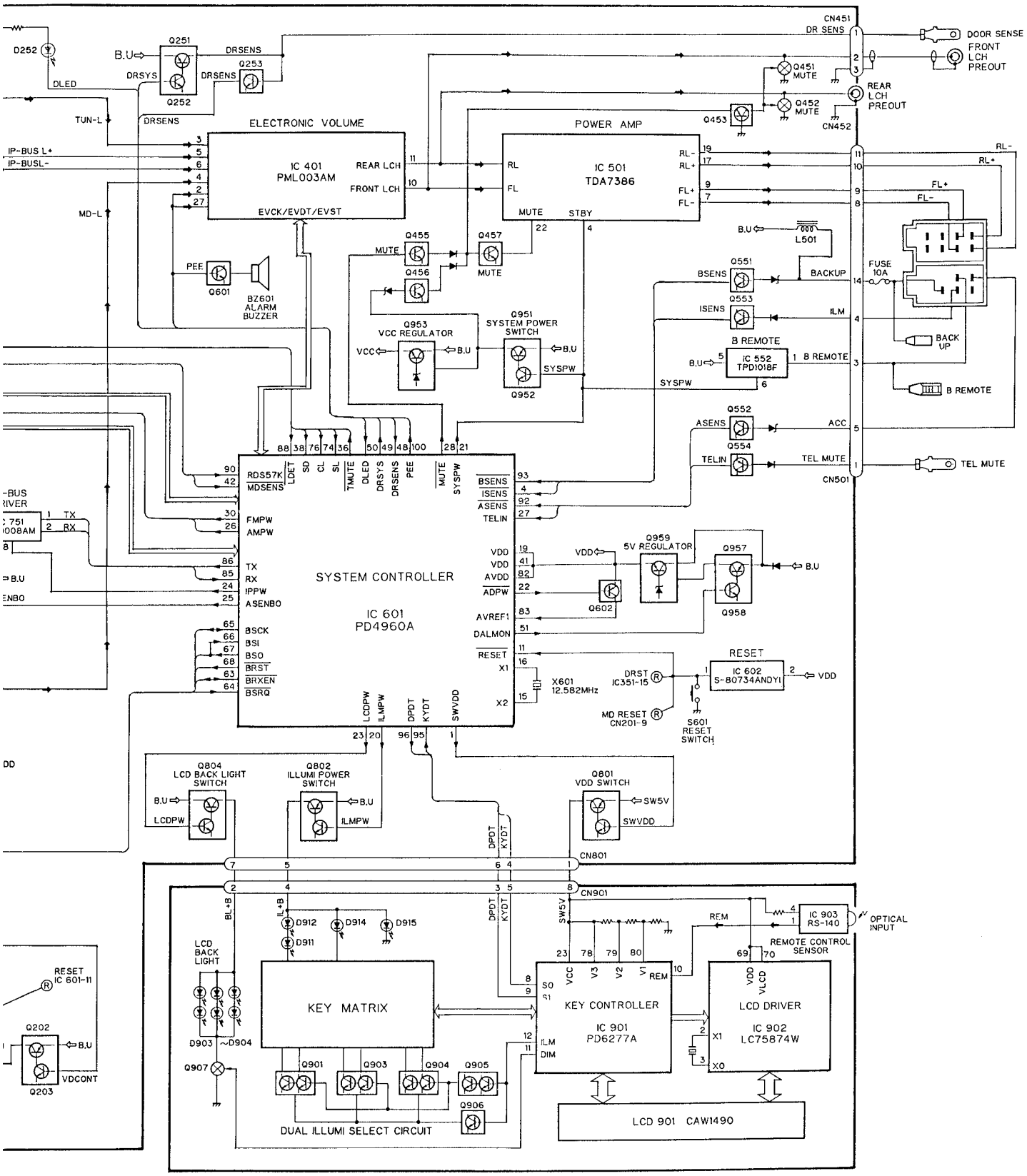
1. Remove the four screws B, two screws C and two screws D
2. Unbend the tabs at two locations indicated by arrows.
3. Remove the Tuner Amp Unit.



7.3 EXPLANATION

7.3.1 BLOCK DIAGRAM





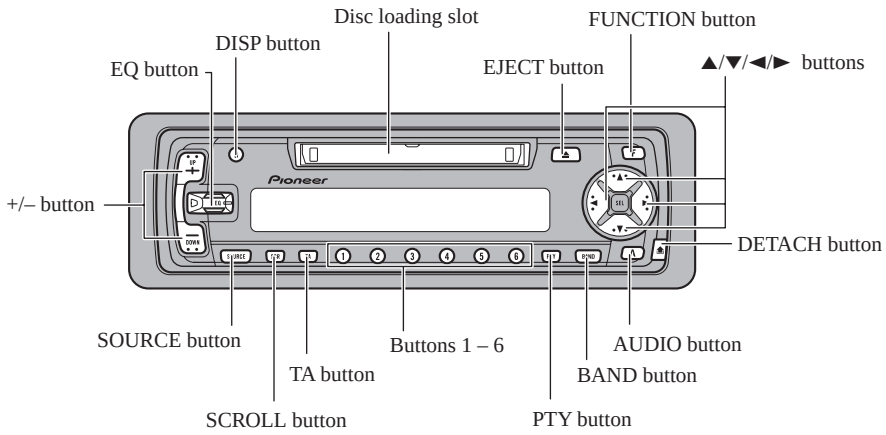
C KEYBOARD UNIT

8. OPERATIONS AND SPECIFICATIONS

8.1 OPERATIONS

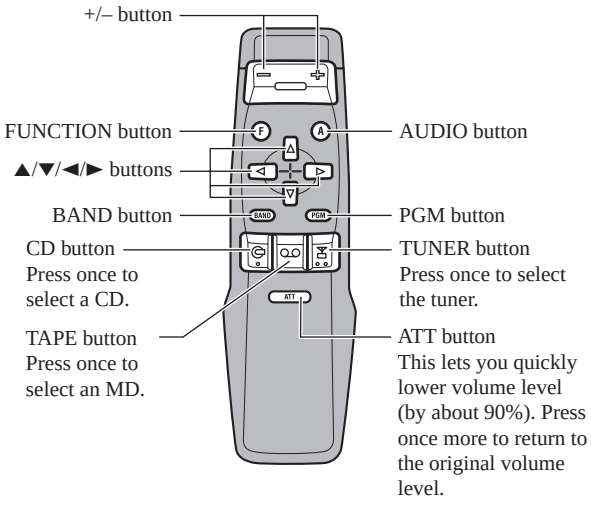
Key Finder

Head Unit



Remote Controller (CD-R66)

The remote controller (CD-R66) enabling remote control of the head unit is sold separately. Operation is the same as when using buttons on the head unit.


+/– button
FUNCTION button
AUDIO button
▲/▼/◄/► buttons
BAND button
PGM button
CD button
Press once to select a CD.
TUNER button
Press once to select the tuner.
TAPE button
Press once to select an MD.
ATT button
This lets you quickly lower volume level (by about 90%). Press once more to return to the original volume level.

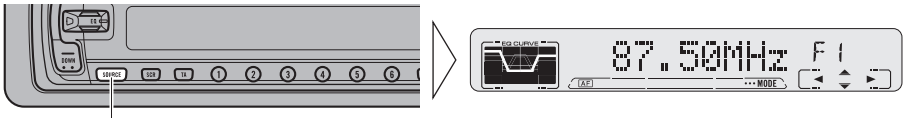
Basic Operation

To Listen to Music

The following explains the initial operations required before you can listen to music.

Note:
- Loading a disc in this product.

1. Select the desired source (e.g. tuner).



Each press changes the Source ...

■ Head Unit

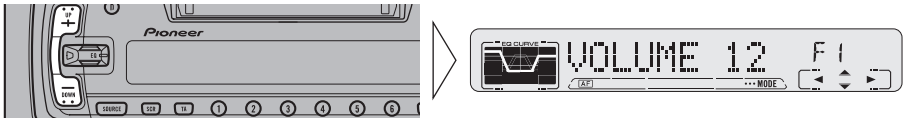
Each press of the SOURCE button selects the desired source in the following order:
Tuner → Built-in MD player → Multi-MD player → Multi-CD player → AUX

■ Remote Controller

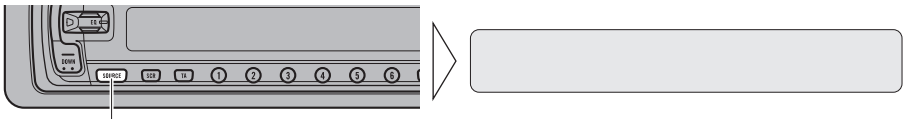
Each press of the button selects the desired source in the following order:
TUNER button : Tuner → Sources OFF
CD button : Multi-CD player → Sources OFF
TAPE button : Built-in MD player → Multi-MD player → AUX → Sources OFF

Note:
- In the following cases, the sound source will not change:
  * No Multi-CD player is connected to this product.
  * No Multi-MD player is connected to this product.
  * No disc is set in this product.
  * No magazine is set in the Multi-CD player.
  * No disc is set in the Multi-MD player.
  * AUX (external input) is set to OFF.

2. Raise or lower the volume.



3. Source OFF.



Hold for 1 second or more

Basic Operation of Tuner

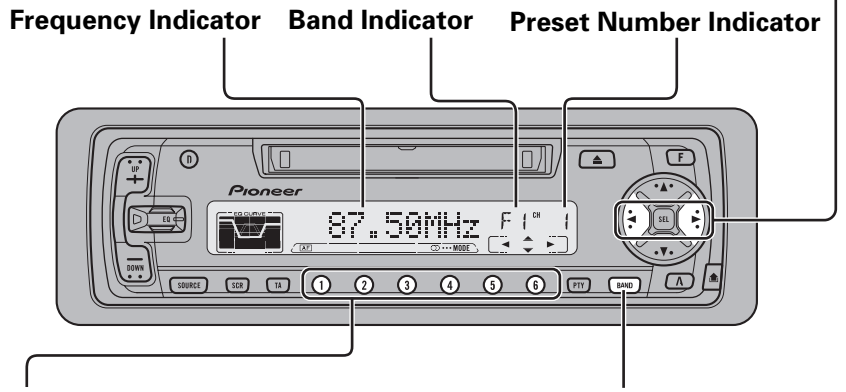
This product's AF function can be switched ON and OFF. AF should be switched OFF for normal tuning operations.

Manual and Seek Tuning

- **You can select the tuning method by changing the length of time you press the ◄/► button.**

Manual Tuning (step by step)	0.5 seconds or less
Seek Tuning (automatically)	Press for 0.5 seconds or more and then release.
Manual Tuning (continuously)	Continue pressing for 0.5 seconds or more without releasing. (When you release the button, Seek Tuning is selected.)

Note:
- "◯◯" stereo indicator lights when a stereo station is selected.



- **You can memorize broadcast stations in buttons 1 through 6 for easy, one-touch station recall.**

Preset station recall	2 seconds or less
Broadcast station preset memory	2 seconds or more

Note:
- Up to 18 FM stations (6 in F1 (FM1), F2 (FM2) and F3 (FM3)) and 6 MW/LW stations can be stored in memory.
- You can also use the ▲ or ▼ buttons to recall broadcast stations memorized in buttons 1 through 6.

Basic Operation of Built-in MD Player

Switching the Display

Each press of the DISP button changes the display in the following order:
Playback mode (Elapsed play time)
→ Disc Title → Track Title

Eject

Note:
- The MD function can be turned ON/OFF with the disc remaining in this product.
- Discs left partially inserted after ejection may incur damage or fall out.

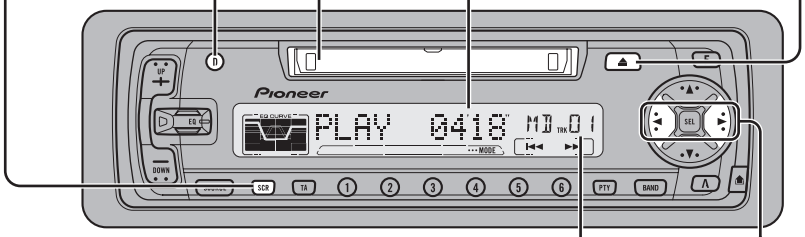
Disc Loading Slot

You can only load one MD at a time in the built-in MD player. Load the MD in the direction of the arrow, with the label side facing up.

Note:
- Load an MD after confirming the MD shutter is closed.

Scrolling the Display

Displayed disc and track names are only up to 10 letters long, but indications can be scrolled.



Track Search and Fast Forward/Reverse

- **You can select between Track Search or Fast forward/Reverse by pressing the ◄/► button for a different length of time.**

Track Search	0.5 seconds or less
Fast forward/Reverse	Continue pressing

Note:
- When you load a disc, this unit reads information recorded on the disc such as the number of tracks. While the disc is being read, "TOC READ" is indicated in the display.
- If you load a disc with the arrow pointing in the wrong direction, it is automatically ejected.
- If the built-in MD player cannot operate properly, an error message (such as "ERROR-11") appears on the display.

Basic Operation of Multi-CD Player

This product can control one or more multi-CD players. (There are some types of Multi-CD players such as CDX-P630S which you cannot connect more than one.)

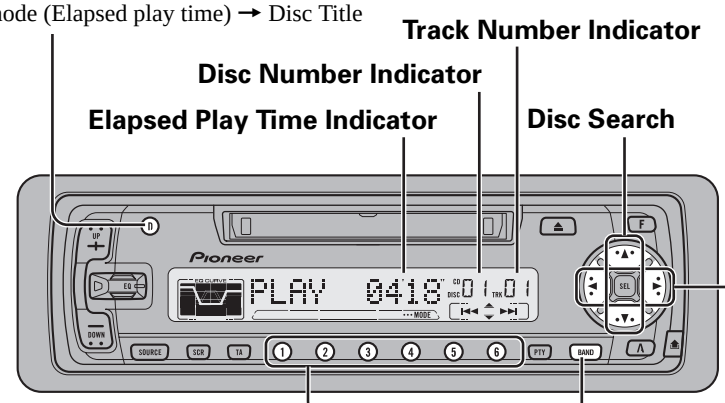
Track Search and Fast Forward/Reverse

- **You can select between Track Search or Fast forward/Reverse by pressing the ◄/► button for a different length of time.**

Track Search	0.5 seconds or less
Fast forward/Reverse	Continue pressing

Switching the Display

Each press of the DISP button changes the display in the following order:
Playback mode (Elapsed play time) → Disc Title



Switching the Multi-CD Player

Using a multiple connection adapter lets you connect up to three Multi-CD players.

M-CD 1 → M-CD 2→ M-CD 3
(Displayed about for 2 seconds.)

Disc Number Search (for 6-Disc, 12-Disc types)

- **You can select discs directly with the 1 to 6 buttons. Just press the number corresponding to the disc you want to listen to.**

Note:
- When a 12-Disc Multi-CD Player is connected and you want to select disc 7 to 12, press the 1 to 6 buttons for 2 seconds or longer.

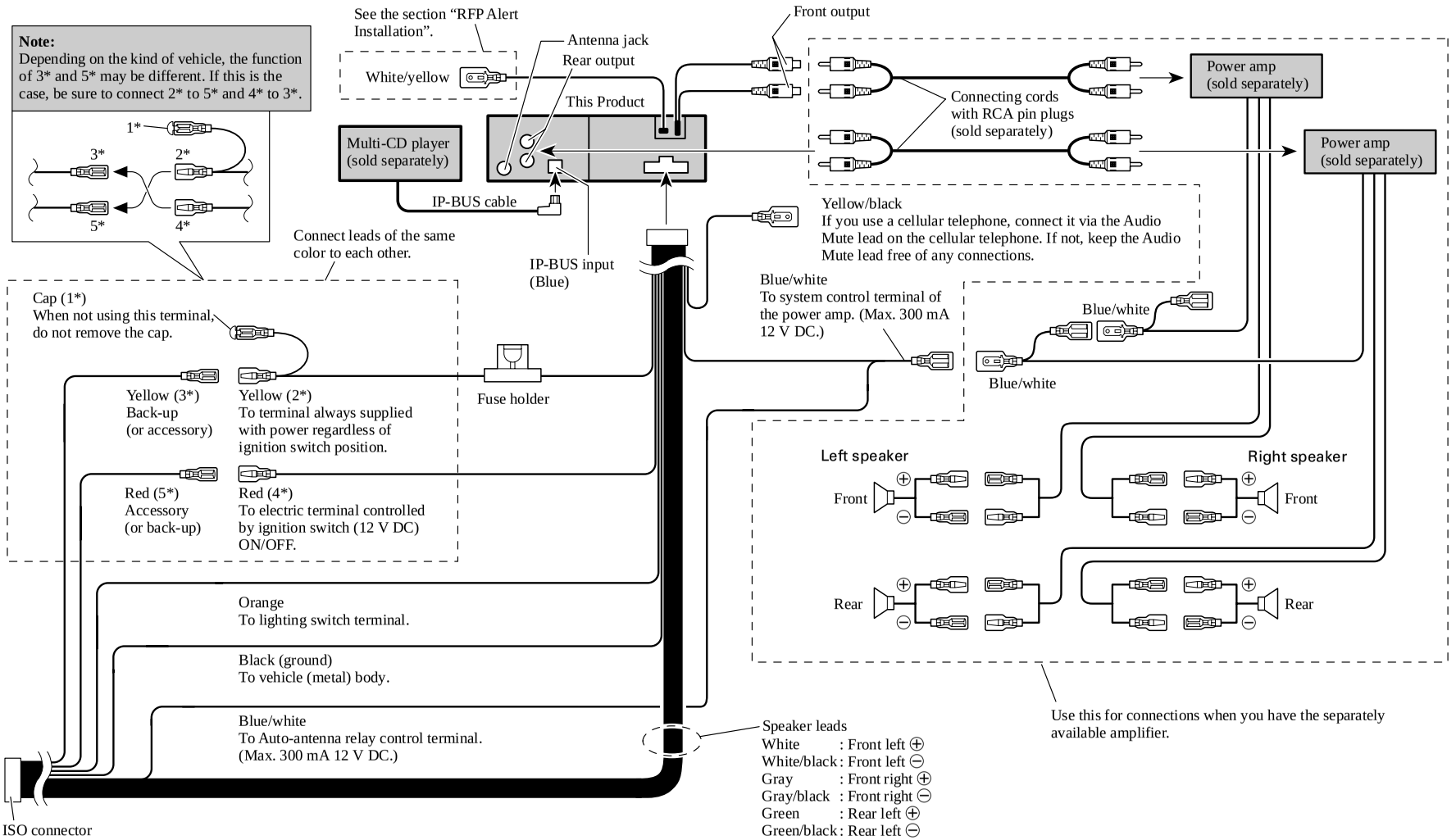
Disc Number Rough Search (for 50-Disc type only)

This handy function lets you select discs loaded in a 50-Disc Multi-CD Player using the 1 to 5 buttons. The 50 discs are divided into five blocks, with each of the 1 to 5 buttons assigned to a block.

- **Select the desired block with the 1 to 5 buttons.**

Note:
- After completing a rough search, use the ▲ and ▼ buttons to select a desired disc.

Note:
- If you switch displays when disc titles have not been input, “NO TITLE” is displayed .
- The multi-CD player may perform a preparatory operation, such as verifying the presence of a disc or reading disc information, when the power is turned ON or a new disc is selected for playback. “READY” is displayed.
- When a magazine is loaded into a 50-Disc type Multi-CD Player, information on all the discs in the magazine is read.
  If you start playing a disc on a 50-Disc type Multi-CD Player before reading of information on all discs has been completed, reading of information stops part way through. This will prevent you from using a number of functions. (If you try and use these functions, “NOT READY” is displayed.)
  If this happens, reading of information begins again when you switch to a component other than the 50-Disc type Multi-CD Player.
- If the multi-CD player cannot operate properly, an error message such as “ERROR-14” is displayed. Refer to the multi-CD player owner’s manual.
- If there are no discs in the multi-CD player magazine, “NO DISC” is displayed.
- “LOAD” will be displayed in the following cases:
  * If the disc in the extra tray in selected.
  * If the disc in moved from the extra tray to the magazine.
  (Refer to the 50-Disc type multi-CD player owner’s manual.)
- You cannot use the “Ejecting a Single Disc”, “Frequency Play”, “Music Group Play” or “ABC Disc Title Search” functions with this unit.


Note:
Depending on the kind of vehicle, the function of 3* and 5* may be different. If this is the case, be sure to connect 2* to 5* and 4* to 3*.
1*
2*
3*
4*
5*
See the section "RFP Alert Installation".
White/yellow
Antenna jack
Rear output
This Product
Front output
Multi-CD player (sold separately)
IP-BUS cable
IP-BUS input (Blue)
Connecting cords with RCA pin plugs (sold separately)
Power amp (sold separately)
Power amp (sold separately)
Yellow/black
If you use a cellular telephone, connect it via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.
Connect leads of the same color to each other.
Blue/white
To system control terminal of the power amp. (Max. 300 mA 12 V DC.)
Blue/white
Blue/white
Cap (1*)
When not using this terminal, do not remove the cap.
Fuse holder
Yellow (3*)
Back-up
(or accessory)
Yellow (2*)
To terminal always supplied with power regardless of ignition switch position.
Red (5*)
Accessory
(or back-up)
Red (4*)
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
Left speaker
Right speaker
Front
Front
Rear
Rear
Orange
To lighting switch terminal.
Black (ground)
To vehicle (metal) body.
Blue/white
To Auto-antenna relay control terminal.
(Max. 300 mA 12 V DC.)
Use this for connections when you have the separately available amplifier.
Speaker leads
White : Front left ⊕
White/black : Front left ⊖
Gray : Front right ⊕
Gray/black : Front right ⊖
Green : Rear left ⊕
Green/black : Rear left ⊖
Violet : Rear right ⊕
Violet/black : Rear right ⊖
ISO connector

Note:
In some vehicles, the ISO connector may be divided into two. If this is the case, be sure to connect to both connectors.

⚠ CAUTION

- Cords for this unit and those for other units may be different colors even if they have the same function. When connecting this unit to another unit, refer to the supplied Installation manuals of both units and connect cords that have the same function.

8.2 SPECIFICATIONS

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Dimensions
(mounting size) ..... 178 (W) × 50 (H) × 150 (D) mm
(front face) ..... 188 (W) × 58 (H) × 18 (D) mm
Weight ..... 1.3 kg

Amplifier

Maximum power output ..... 40 W × 4
Continuous power output ..... 25 W × 4
(DIN45324, +B = 14.4 V)
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Preout output level/output impedance ..... 500 mV/1 kΩ
Equalizer (3-Band Parametric Equalizer)
(Low) ..... Frequency: 40/80/100/160 Hz
Q Factor: 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Level: ±12 dB
(Mid) ..... Frequency: 200/500/1k/2k Hz
Q Factor: 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Level: ±12 dB
(High) ..... Frequency: 3.15k/8k/10k/12.5k Hz
Q Factor: 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Level: ±12 dB
Loudness contour
(Low) ..... +3.5 dB (100 Hz), +3 dB (10 kHz)
(volume: –30 dB)
(Mid) ..... +10 dB (100 Hz), +6.5 dB (10 kHz)
(volume: –30 dB)
(High) ..... +11 dB (100 Hz), +11 dB (10 kHz)
(volume: –30 dB)

MD player

System ..... Mini disc digital audio system
Usable discs ..... Mini disc
Signal format ..... Sampling frequency: 44.1 kHz
Number of quantization bits: 16; linear
Frequency characteristics ..... 20 – 20,000 Hz (±1 dB)
Signal-to-noise ratio ..... 94 dB (1 kHz) (IEC-A network)
Dynamic range ..... 93 dB (1 kHz)
Number of channels ..... 2 (stereo)

FM tuner

Frequency range ..... 87.5 – 108 MHz
Usable sensitivity
..... 11 dBf (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity .... 16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IEC-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range ..... 531 – 1,602 kHz
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

LW tuner

Frequency range ..... 153 – 281 kHz
Usable sensitivity ..... 30 μV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

Note:
- US and foreign patents licensed from Dolby Laboratories Licensing Corporation.
- Specifications and the design are subject to possible modification without notice due to improvements.